

COORDINATE AND SUBORDINATE CONJUNCTIONS
IN CHILDREN'S TEXTS

by

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ABSTRACT

This thesis examines the use of conjunctions in texts, and in particular their function as a marker of text type. Children's acquisition of this aspect of conjunction usage is the main focus. An examination of the characteristics of various text types and the nature of coordinate and subordinate conjunctions in English serves as a framework within which the experimental evidence from adults and children (aged three to five) is considered. Three types of texts-- conversation, narratives, and game explanations-- were collected. It was found that both the types of conjunctions used and the frequency of conjunctions as a class vary according to text type; conjunctions are much more frequent in narratives and explanations than in conversation. It is shown here that pragmatic or cognitive factors cannot account for these findings; they can only be explained as a function of text type. The data from the children provide evidence that their conjunction usage is also constrained by text type, although their patterns of use are not exactly the same as the adults'. The results indicate that by age five children have a definite conception of text as a linguistic entity.

RESUME

Dans cette thèse, nous examinerons l'utilisation des conjonctions dans les textes, et en particulier leur fonction comme marqueurs du type de texte. Cette recherche traitera principalement de l'acquisition chez l'enfant de cet aspect particulier de l'utilisation des conjonctions. L'étude des caractéristiques de différents types de texte et la nature des conjonctions de subordination et de coordination en anglais sert de cadre à l'intérieur duquel nous avons considéré les données recueillies auprès d'adultes et d'enfants âgés de trois à cinq ans. Trois types de texte ont été considérés: conversationnel, narratif et explicatif (jeux). Nous montrerons que les types de conjonctions utilisés de même que la fréquence de la classe des conjonctions varient selon le type de texte. Les conjonctions sont beaucoup plus utilisées dans les textes narratifs et explicatifs que dans les textes conversationnels. Il sera démontré que les facteurs pragmatiques et cognitifs ne peuvent rendre compte de l'utilisation des conjonctions; celle-ci ne peut être expliquée qu'en fonction du type de texte. Les données recueillies auprès des enfants suggèrent que leur utilisation des conjonctions est également contrainte par le type de texte, bien que leurs schémas d'utilisation ne soient pas exactement les mêmes que ceux des adultes. Les résultats indiquent que les enfants âgés de cinq ans ont une conception précise du texte comme entité linguistique.

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CHAPTER I

INTRODUCTION

1.0 Introduction

This thesis will present various aspects of the use of conjunction as a textual device, and in particular as a marker of text type. Although the use of this device in adults' discourse<1> will be examined, the emphasis will be on a study of children's acquisition of this aspect of conjunction.

An outline of the thesis as a whole can be found in Section 1.4. The remaining sections of this chapter will discuss the concepts of text, cohesion, and the mechanisms of clause linkage. These sections will provide some general background to the more specific content of the following chapters.

1.1 Text

The idea of text as an appropriate object for linguistic research has been the subject of controversy in the past. Most linguists have simply ignored text, confining their research to the domain of the sentence. But others have gone so far as to argue against the necessity of positing text as a theoretical entity (e.g. Katz & Fodor, 1963; Dascal & Margalit, 1974). Their argument is that

there are no properties of texts (i.e. stereotypically, entities larger than a sentence) that cannot be accounted for as properties of sentences (or if there are, then they are not properties of interest to linguists). Eventually, though, many mainstream linguists came to acknowledge that there were certain processes that could not be fully accounted for within a sentence-based framework but which were still of linguistic interest (e.g. Williams, 1977; see also Morgan, 1982).

The argument against text as a necessary linguistic concept based itself on the assumption that a text is no more than a sort of "super-sentence", i.e. that by simply linking the individual sentences of a text together, by means of coordination or subordination, into one long sentence, one will have an object that is both a text and produced by sentence grammar alone. The papers in Petöfi (ed., 1979) (see especially Itkonen (1979)) show that this cannot successfully be done-- that texts do have properties separate from those of sentences. Note also that a complex sentence equivalent in length to a moderately lengthy text would be pragmatically anomalous-- particularly if there were a high degree of embedding involved-- however grammatical it might be.

Stereotypically, a text is considered to be a linguistic object that is longer than a single sentence, but this is not necessarily the case. As Gopnik (1979) points out, a sequence of sentences is not necessarily a text nor

is a text necessarily a sequence of sentences. A single sentence may, in fact, be a well-formed text. It is even possible for a text not to contain any sentences at all, e.g. certain modern poetry (Titzmann, 1979), road signs (de Beaugrande & Dressler, 1981), and some one-word utterances. Furthermore, not just any sequence of sentences can be considered to be a text. A linguistic object must possess certain properties to be a text.

A text is actually an entity defined at two different theoretical levels: the linguistic and the communicative. (For a more complete description of this circumstance see van Dijk, 1972; Petöfi, 1973; also many of the papers edited by Petöfi (1979), especially García-Berrio, 1979; Gopnik, 1979; Schwarze, 1979; Segre, 1979; Sgall, 1979.) At the linguistic level a text usually does have the form of a sequence of sentences. As a unit of communication it must conform to certain pragmatic and contextual requirements. An utterance must be well-formed at both levels to achieve textuality. As Segre (1979; 84) says,

what needs stressing is the one-to-one link between linguistic competence and textual competence: the latter can be realized only through the former; the former does not, by itself, permit the connection of sentences into discourses.

Two of the most important properties of texts are cohesion and coherence; these are approximately analogous to syntax and semantics, respectively, at the sentence level. Cohesion specifies how the surface linguistic elements of a text are linked to each other to form one whole. Coherence,

on the other hand, has to do with how the concepts underlying and encoded in a text are linked together in some sensible fashion. Example (1.1) below is neither cohesive nor coherent: there are no linguistic links between the two sentences nor do the concepts encoded in them have any obvious relevance to each other. Compare it with example (1.2), in which the two sentences are linked both conceptually and by surface linguistic means, e.g. lexical items from the same semantic field.

1.1 I bicycled to the store. The tiger ate the water buffalo.

1.2 I bicycled to the store. There I bought milk, bread, and lottery tickets.

A text must also serve a communicative function; this is impaired in the case of a putative text that is not coherent, like example (1.1). (Cohesion, or the lack thereof, can also affect communicative intent, but it is not as crucial as coherence; this will be discussed in greater detail below.) Thus, in the case of (1.1), it is not clear in what context such an utterance might be appropriate, what goal a speaker might hope to achieve by saying it, how it could be relevant to a recipient, and so on. This contrasts with (1.2), for which none of these questions arises. A textual (well-formed) text serves the function of communicating something from someone to someone in some context. It is this that distinguishes it at an abstract

level from the sentence, which is not defined in communicative terms at any level of description. On the contrary, a sentence may be pragmatically and even semantically anomalous, but still be well-formed, i.e. grammatical. A text must pass muster at all of these levels in order to be well-formed, i.e. textual.

It is not my intention in this thesis to delve deeply into the non-linguistic aspects of textuality, although they will be touched on from time to time. But my main concern will be with the establishment of cohesion, i.e. the purely linguistic aspects of textuality. In particular, we will be examining the role of conjunctions as a cohesive device and as a marker of text type. In the next section, then, the nature of cohesion will be discussed in greater detail.

1.2 Cohesion

As was indicated above, cohesion is based on the interrelationships of various surface linguistic elements in a text. To be cohesive a text requires some kind of linguistic continuity, with individual sentences sharing elements with other sentences, both their immediate neighbours and those farther away. A variety of linguistic devices serves to establish cohesion.

It was with the work of Halliday & Hasan (1976) that the notion of cohesion first became current. In this work, Halliday & Hasan discuss the different types of cohesive

ties that may exist between sentences of a text. The major classes they posit are lexical cohesion (the use of vocabulary from a particular semantic field or fields), reference (the use of pronominals, definite articles, demonstratives, and comparatives), substitution, ellipsis, and conjunction. Halliday & Hasan find the cohesive use of substitution and ellipsis particularly interesting, for the use of these devices entails that a particular section of a text cannot be fully interpreted without reference to an earlier portion; consider examples (1.3), involving substitution, and (1.4), involving ellipsis.

1.3 I went to Toronto last week. Joanne went there too.

1.4 I went to Toronto last week. Joanne went too.

Someone who hears only the second sentence in either of the above examples will have no way of knowing where Joanne went; it is only by referring to the first sentence that one is able to furnish an interpretation. Reference ties (e.g. pronoun use), too, may mean that a full interpretation of a particular sentence depends on earlier sentences. With lexical and conjunctive ties this may not be the case; they are more a matter of overtly shared material (but see below).

Clearly, cohesive ties are important in establishing textuality (or texture, as Halliday & Hasan call it). Halliday & Hasan go further than merely asserting their

importance, though; they maintain that cohesion is the only thing which makes a text a text, and that without it no text can exist: "it is common to text of every kind and is, in fact, what makes a text a text" (13). They appear to believe that the overt realization of the underlying semantic relations holding between the elements of a text is necessary for it to have textuality.

There is considerable evidence, though, indicating that this is not the case. (For a comprehensive discussion of this matter, see Brown & Yule (1983; 190 ff.).) It is possible for a stretch of discourse to be a text without being cohesive, as in (1.5) (from Brown & Yule 1983; 196). It is also possible for sentences linked by many cohesive ties not to constitute a text, as in (1.6) (originally composed by Enkvist, cited by Brown & Yule, 1983; 197).

- 1.5 A: There's the doorbell.
B: I'm in the bath.

- 1.6 I bought a Ford. A car in which President Wilson rode down the Champs Elysées was black. Black English has been widely discussed. The discussions between the presidents ended last week....

In example (1.5) there are no overt cohesive links, yet no native speaker has any trouble determining the relevance of the second utterance to the first and understanding the dyad as a coherent discourse. In (1.6), on the other hand, there are many cohesive ties between the sentences, mainly involving lexical cohesion, but it is impossible to

understand the aggregate as any kind of coherent whole. Example (1.5) is coherent but not cohesive, whereas (1.6) is cohesive but not coherent. Thus it would appear that, contrary to Halliday & Hasan's claims, coherence is actually a more important component of textuality than cohesion is.

It is with cohesion, though, that I will be concerned in this thesis, and there can be little doubt that most texts longer than a sentence contain some cohesive elements.

Conjunction, the device studied here, is a particularly interesting cohesive device because conjunctions explicitly assert a link between the elements they connect, even when such a connection would not otherwise be obvious. In a sentence like (1.7) (from Carlson, 1985; 152), for example, the use of the conjunction imposes cohesion and causes the text recipient to search for some type of coherent link between the two clauses that will cause the whole to make sense.

1.7 Reagan is smart and a whale is a fish.

Were it not for the presence of and, the text recipient would be inclined to dismiss (1.7) as a non-text; since the conjunction is there, he<2> attempts to construct some kind of context in which (1.7) is coherent. If he fails to do so, he will again rule the structure out. But, as Carlson points out, sentence (1.7) becomes perfectly normal if it is known to be a response to a question like those in (1.8):

- 1.8.a What did you learn at school today?
b What common misconceptions are there?

It would also be coherent in a context like those in (1.9), which do not involve a question/answer situation:

- 1.9.a In school I learned that...
b Today I found out two interesting things:...

(For a more detailed discussion of conjoined structures like (1.7), see Chapter III.)

Conjunctions are overt lexicalizations of the semantic relations that hold between linguistic elements; these in turn realize the real-world relationships holding between real events. Using a conjunction stipulates that two clauses or two phrases are linked together.

1.3 Clause Linkage

The other major cohesive devices discussed by Halliday & Hasan (1976) rely for their effect on shared elements (whether overt or implicit) found in two or more clauses. In the case of an example like (1.10), it is the presence of elements having a shared interpretation that accounts for the fragment's cohesiveness.

- 1.10 Therese picked some carnations. Those flowers had always been her favourite kind.

As Halliday & Hasan (1976; 23) remark, text receivers "insist on interpreting any passage as text if there is the

remotest possibility of doing so." (This accounts for the typical text receiver's attempt to make sense of a structure like (1.7).) Following this strategy, the recipient of (1.10) will assume that Therese and her have a shared interpretation, and that carnations and those flowers do as well. The two clauses will be assumed to be connected by these ties.

But in a case involving conjunction, like (1.7), the two clauses are asserted to be linked; the text recipient is informed directly that the clauses belong together and, in the case of an otherwise uncohesive (not to mention apparently incoherent) example like (1.7), the problem is to construct some context in which this could reasonably be the case.

A conjunction, as we have seen, is a means of explicitly encoding a link between two objects, whether used phrasally, as in (1.11), or clausally (or sententially), as in (1.12). (Only clausal conjunction will be examined in any detail in this thesis.)

1.11 I gave brownies to Jim and Mary.

1.12.a I gave Jim a brownie but he refused to eat it.

b I gave Jim a brownie. But he refused to eat it.

Consider also example (1.13):

1.13 Mary ate several brownies and Jim, although refusing sweets, wolfed down salad as if there was no tomorrow. Cheryl showed a marked preference for the lemon squares and consumed a plate of them. But we still had a week's supply of food left over at the end of the party.

In this case it is clear that but serves to link the last sentence not just to the preceding sentence but to the entire preceding discourse.

This means that the rule (or rules) of conjunction is a textual rule, according to Gopnik's (1979; 165) criterion:

Any rule which can operate across sentence boundaries is a rule of the text grammar. Any rule which must operate within sentence boundaries is a rule of the sentence grammar.

The conjunction rule clearly is one that can operate across sentence boundaries. Another such rule is VP Deletion, as the following example shows (Williams, 1977; 102):

1.14 A: Did John leave?
B: Yes, he did.

A variety of grammatical processes, then, are able to operate across sentence boundaries, and even between the utterances of different speakers, as in (1.14). (For further examples, see Williams, 1977; Gopnik, 1979.)

In English, as in many languages, clauses are divided into main and subordinate clauses; subordinate clauses are considered to be dependent on other clauses in a way that main clauses are not. Likewise, there are also coordinate and subordinate conjunctions, introducing main and subordinate clauses, respectively. Examples (1.15) and

(1.16) exemplify typical coordinate and subordinate conjunctions, respectively, in English.

1.15 I offered Jim a doughnut but he wouldn't take it.

1.16 He doesn't eat sweets because he's trying to lose weight.

Note that, in conjoined structures in English, the coordinate and subordinate clauses differ on the surface only with respect to the choice of conjunction. (This matter will be discussed more fully in Chapter III.)

English is what is known as a co-ranking language (Longacre, 1985), because one sentence in English may contain several verbs of the same rank. Even in a language like German, which differs from English in that main and subordinate clauses have different word orders, there is no difference between the status of the verbs in the two types of clauses. Longacre (1985; 239) points out that in languages like English and German it is also generally the case that various paraphrastic structures are available for encoding a given situation, and that one may frequently choose either a subordinate or a coordinate structure, as is illustrated in (1.17).

- 1.17.a After chopping the wood, John carried it to his house.
b After John chopped the wood, he carried it to his house.
c John chopped the wood and carried it to his house.

In English, then, it is possible to construct paraphrases containing subordinate structures with non-finite and finite

verbs, <3> as well as coordinate structures (cf. Clark, 1973).

But, as Longacre shows, co-ranking structures are not the only type of clause-linking structures found in the world's languages. Some languages, mainly in New Guinea and in South America, have what are called 'chaining structures'. In a chaining language, two verbs having full (independent) rank may never co-occur in a sentence. Rather, a complex sentence will have one dominant verb, usually occurring finally, and the rest of the verbs in the sentence (the medial verbs) will be dependent and will be differently inflected. An example from Selepet (a New Guinean language) is given in (1.18) (from Longacre, 1985; 238).

- 1.18.a Kawa ari-op
Kawa left
'Kawa left.'
- b Kiap ya taka-op
patrol officer that arrived
'That patrol officer arrived.'
- c Kawa ari-mu kiap ya taka-op
leave-subject switch
'Kawa left and that patrol officer arrived.'

The medial verb ari-mu in (1.18.c) is not marked for tense and aspect, as the final verb is, but it does have a marker indicating that its subject differs from that of the final verb. In chaining languages, according to Longacre, it is not possible to provide a variety of subordinate and coordinate paraphrases of a sentence, as it is in co-ranking

languages; a complex sentence can only be expressed in terms of one or more medial clauses and one final clause.

The chaining process is not confined to sentences; in some (but not all) chaining languages, there are also discourse chains. According to Longacre, such a chain may comprise a stretch of discourse "which can be as long as two or three pages" (265). This suggests (although rather infelicitously phrased) that in some cases a chain might comprise a whole text; in some languages this does indeed seem to be the case (p. 283). But Longacre says that generally the longer chains seem to correspond more or less to the paragraph in Indo-European languages. Within the discourse chain, there will be shorter sentence chains, which will contain only same-subject verbs. A different-subject verb will mark the end of a sentence, while a true final verb marks the end of the paragraph or, in some languages, the end of the text.

I have discussed chaining languages here (albeit only briefly) because the phenomena of sentence and discourse chaining seem to me to be analogous to the use of conjunction within and between sentences in English and related languages. In both cases, different though they be, we have a process of clause-linking that operates not only within the sentence but also across sentence boundaries. Both processes are (at least in some languages) textual processes, according to Gopnik's (1979) definition. It appears that these methods of "hooking" clauses together

proceed in more or less the same way, regardless of other processes that may be operating within and delineating individual sentences. Conjunction can even operate across speakers, as in (1.19); Longacre gives no indication that chaining can do so, and that does seem rather unlikely.

- 1.19 A: I never went back there.
B: So you don't know what happened to everyone.

Clause conjunction, then, is exactly the sort of process that one would expect to operate across sentence boundaries-- acting cohesively-- because clause linkage, however it occurs, is a process that is not confined to sentences. It is, therefore, a paradigm case of a textual process.

1.4 Outline of Thesis

In the preceding sections some of the concepts that will be assumed in this thesis have been discussed. The rest of the thesis will be structured as follows. In Chapter II, text typology and the characteristics of different text types will be discussed; particular attention will be paid to narrative texts, which are an important object of study here. The literature on children's acquisition of text will also be examined.

In Chapter III, research on various aspects of conjunction-- syntactic, semantic, pragmatic, and textual-- will be examined. The question of how many syntactic

classes of English conjunctions there are will be discussed; can they simply be divided into coordinate and subordinate conjunctions, or are there more classes? The semantic and pragmatic nature of the links expressed with conjunctions will be considered, as well as their role in establishing textuality. Finally, the literature on the acquisition of conjunctions will be surveyed.

In Chapters IV and V, I will present the results of my own research on the acquisition of conjunctions as a textual marker. In Chapter IV, the adults' use of conjunctions in three main text types-- conversations, stories, and explanations (of how to play a game)-- will be considered. These results will provide a basis of comparison for the children's discourse, examined in Chapter V. The children's use of conjunctions will be compared to the adults' and will also be examined as it changes with age, from three to five years old. Insofar as the children's performance differs from that of the adults, possible causes for the difference will be considered.

Finally, Chapter VI will summarize the conclusions that may be drawn from the work as a whole and indicate directions for further research.

Notes to Chapter I

1. There is some terminological vagueness in the field of text linguistics, and in particular concerning the use of the terms 'text' and 'discourse'. They are often considered to be synonyms, with North American and British linguists generally preferring the term 'discourse' and Europeans using the term 'text'. Van Dijk (1972), however, uses 'discourse' to designate the spoken or written realization of the abstract entity 'text', just as 'utterance' designates the realization of 'sentence'. I find it clearer, though, to use 'discourse' as a mass noun and 'text' as a count noun, so that one can say that a particular text is made up of a particular kind of discourse (see discussion in Chapter II).
2. As is commonplace, I will be using 'he', 'him', and 'his', rather than 'he or she', 'him or her', 'his or her', in generic contexts. This usage may be understood as an abbreviation of the expanded form.
3. In this thesis, I will only be concerned with finite conjoined subordinate clauses, i.e. with structures like (1.17.b), not (1.17.a). My primary interest here is that class of English subordinate clauses that on the surface resemble coordinate matrix clauses in all but the choice of conjunction. This is a type of subordinate that is not found in all languages and the

question will arise of whether they are indeed different from main clauses (see Chapter III). These subordinates are all adverbial clauses (see Thompson & Longacre, 1985).

CHAPTER II
TEXT TYPOLOGY AND NARRATIVE THEORY

2.0 Introduction

In this chapter, some of the research that has been done in the field of text typology will be examined. We will consider what characteristics a relevant theory of text typology should have and to what extent the work that has been done in this field meets these criteria.

After discussing the general area of text typology, we will devote some time to examining research on one particular text type: the narrative. Narratives (or stories) make up one of the most widely studied text types, for a variety of reasons (see Section 2.2). They also account for much of the corpus of discourse studied in this thesis.

Finally, the literature concerning children's acquisition of various types of discourse will be considered in order to determine what the main characteristics of child discourse are.

2.1 Some Approaches to Text Typology

It is intuitively clear to native speakers that different types of texts, with different formal and functional properties exist; obviously, a complete text theory must account for the nature of these various types. Nevertheless, there has not been any general agreement on what the most important distinctions among text types are. For example, there has been considerable work on the difference between ordinary speech and various specialized text types, e.g. scientific texts, or literary texts.

Let us consider in this context the papers in Petöfi et al. (ed., 1975), in particular that of Petöfi (commented on by Thümmel (1975), Gopnik (1975), and Petöfi (1975b)). These papers concentrate on the difference between ordinary language and scientific texts.

Petöfi (1975a) discusses the system of text-external and text-internal features, proposed by Gülich & Raible, that are intended to characterize various text types. The text-external features are as follows:

the groups of features	the elements of the single groups
(A) Linguistic basic function	(Aa) communicative intention (Ab) informative intention (Ac) expected reaction
(B) Type of communicative situation	(Ba) everyday (Bb) public and/or legal (Bc) scientific (Bd) literary
(C) Sphere of objects and facts	(Ca) referring to space and time (Cb) not referring to space and time
(D) Shared communicative situation between speaker and hearer	(Da) shared communicative situation (Db) partially shared communicative situation (Dc) different communicative situation
(E) Direction of communication	(Ea) monologue (Eb) dialogue

(Petöfi, 1975a; 66, translation mine)

As we see, the features of the total communicative situation in which a text is embedded are developed in considerable detail. But the text-internal features are simply sketched in by Gülich & Raible, being regarded "(1) in the sense of analogues of text-external characteristics, (2) in the sense of a choice from among the rules of the linguistic system" (Petöfi, 1975a; 67, translation mine). Petöfi himself expands the above description as follows: "(1) refers to explicit manifestations of a communicative situation in a text, (2) refers to those rules of the language, by means of which the text has been constructed" (67).

Now, although it is true that texts are rooted in the communicative situation, our own main concern is the text-linguistic devices characterizing various text types. These, though, are not dealt with in any detail by GÜlich & Raible (as cited by Petöfi). Petöfi's own main interest in this paper is the characterization of the lexica of ordinary language and of various technical languages.

While it is true that vocabulary plays a role in determining text type, it is not, as Gopnik (1975) indicates, a crucial role. As she points out, one could produce a poem using scientific vocabulary or a scientific text using everyday vocabulary, without causing the former to be any more or the latter any less a scientific text. But she makes the important point that minor (or closed) class morphemes do crucially vary according to text type. It is precisely such morphemes (namely conjunctions) that interest us in this study. Gopnik lists three main linguistic bases of different text types:

1. the lexicon...
2. the syntactic rules (both sentence and text)
3. modelling constraints [governing logical representation, interpretation, etc.] (p. 111)

All three levels would vary in different text types, by which she means everyday and various types of technical texts.

But the question of differentiating between everyday texts and technical texts, however necessary it may be, is not the most important problem as far as this study is concerned. All the types of discourse studied here (i.e.

conversation, stories, and explanations of games) are composed of everyday language. Nevertheless, it seems intuitively clear that narrative and conversation, for example, are different types of texts, and that this difference is not simply a function of the monadic (or monologue) versus dyadic (or dialogue) distinction. (For example, although narratives are typically monologues, it is not impossible for two people (taking turns) to tell a story to some third party.) Clearly, there must be a means of distinguishing text types within the larger category of everyday speech (and presumably within the category of technical language, as well), and this must be independent of such characteristics as technical vocabularies, etc.

The approach proposed by de Beaugrande (1980; see also de Beaugrande & Dressler, 1981), although still fairly embryonic, seems to be the most useful in this respect. De Beaugrande begins by conceding that, at least at present and possibly inherently, text types cannot be rigorously distinguished from each other, but rather are fuzzy categories. He states that:

the text type can be defined only as strictly as considerations of efficient applicability allow. Unduly stringent criteria, like the rigorous borderline between sentences and non-sentences, can either (1) open up endless disputes over the admissibility of unusual or creative texts to a type, or (2) lead to so many detailed types that any gains in heuristic usefulness are lost. (de Beaugrande, 1980; 196)

He then goes on to propose the following working definition of text type: "a text type is a distinctive

configuration of relational dominances obtaining between or among elements of: (1) the surface text; (2) the textual world; (3) stored knowledge patterns; and (4) a situation of occurrence" (197). Thus, form, content, and communicative situation all have a role in determining a text type. One cannot stipulate exactly what a given type of text must be like, but one can show what options will be preferred for that type. Much, of course, of a particular text's nature will be determined by strictly individual factors, e.g. the topic it addresses, the context in which it is produced, etc.

De Beaugrande then classifies certain key types of texts. I shall cite at length his descriptions of descriptive, narrative, and argumentative texts.

...In DESCRIPTIVE texts, the CONTROL CENTERS in the textual world are in the main object and situation concepts whose environments are to be enriched with a multiple directionality of linkage. The link types of state, attribute, instance, and specification will be frequent. The surface text will reflect a corresponding density of modifier dependencies. The most commonly applied global knowledge pattern will be the frame.

...In NARRATIVE texts, the control centers in the textual world are in the main event and action concepts which will be arranged in an ordered directionality of linkage. The link types of cause, reason, enablement, purpose, and time proximity will be frequent... The surface text will reflect a corresponding density of subordinative dependencies.<1> The most commonly applied global knowledge pattern will be the schema.

...In ARGUMENTATIVE texts, the control centers in the textual world will be entire propositions which will be assigned values of truthfulness and reasons for belief as facts...; often there will be an opposition between propositions with conflicting value and truth assignment. The link

types of value, significance, cognition, volition, and reason will be frequent. The surface text will contain a density of evaluative expressions. The most commonly applied global knowledge pattern will be the plan whose goal state is the inducement of shared beliefs.

(de Beaugrande, 1980; 197-198)

I have quoted the above passage at length, because the three text types explicated therein are of prime importance. De Beaugrande goes on from this point to discuss other types of texts, namely literary, poetic, scientific, didactic, and conversational. The descriptions of these latter text types make it clear that-- as one intuitively feels-- these are entities at a different level from the first three, in that they are actually composed of the former three types. One also notes that functional properties become far more important than formal ones in defining and distinguishing these "secondary" text types, whereas formal properties play a fairly substantial role in defining narrative, descriptive, and argumentative texts. De Beaugrande himself concedes that the secondary text types are not as basic (198), although his method of presentation seems to imply equal status for all the types mentioned.

It may be useful here to posit a distinction between discourse and text. The distinction I wish to make is one between substance (i.e. in this case, discourse) and unit (i.e. text).^{<2>} Let us assume that texts are made up of discourse. A narrative text, then, will (presumably) be composed primarily, though not necessarily entirely, of narrative discourse. Likewise, a descriptive text will be

composed primarily of descriptive discourse, and so on. Other text types will be formed of various combinations of the primary discourse types. These discourse types will have (more or less) the characteristics described by de Beaugrande; there may be a few other discourse types as well.

As we have seen, De Beaugrande considers that surface linguistic elements comprise only one of the factors working together to define text types. Although this thesis is concerned with aspects of the formal determinants of text type, it is important not to forget the determining influence of functional factors. Smith (1985), for example, has shown that certain formal elements (in this case, sentence types) that are considered to be characteristic of particular text types may still be less frequent in examples of that text type than formal elements considered to be characteristic of other types. If the function and context of a text predispose one to assign it to a particular text type, then linguistic factors that might otherwise point in another direction may be disregarded; functional factors can overrule formal factors. (See also Gopnik (1975), as discussed above.)

In this study, three main types of texts are examined: narratives, explanations, and conversation. The narratives will presumably comprise mainly narrative discourse, with the characteristics already mentioned. The explanations (of how to play a game) will presumably contain portions of both

descriptive discourse (i.e. in describing the basic concept of the game in question, the equipment (if any), etc.) and narrative discourse (i.e. in indicating how play proceeds). But they should be constructed so as to encode contingent rules, with a high proportion of conditional structures (see Section 4.3.4).<3>

Conversation, though, is difficult to characterize explicitly. This is seen in de Beaugrande's description: "in CONVERSATIONAL texts, there is an especially episodic and diverse range of sources for admissible knowledge... The priorities for expanding current knowledge of the participants are less pronounced than for the [other] text types... The surface organization assumes a characteristic mode because of the changes of speaking turn..." (198-99).<4>

Although conversation is a fundamental and common text type, and the subject of much research, it is difficult to characterize it structurally in any sense other than noting its essentially dyadic (or polyadic) nature. Consider the following definition by McTear (1985; 5): "...we have defined conversation as naturally occurring talk involving two or more participants and we have emphasized the importance of social and interpersonal aspects of conversation in addition to its function as a means of transmitting information." This definition too emphasizes the functional over the formal aspects. Thus, although conversation is easy to recognize-- there is no problem

separating the conversational portions from the other text types in the discourse corpus studied here-- it is difficult to characterize.

2.2 Narrative Theory

Narratives, or stories, make up one of the most widely studied types of texts, both within our own culture and cross-culturally. One reason for this, no doubt, is that stories are easily recognizable and thus easily collectible: everybody knows what a story is. In our culture, they are typically monologues; thus, a story-telling task permits a researcher to collect a corpus of connected discourse. Narratives may be relatively formal or relatively informal, but they are not, in our culture, characterized by either extreme formality or extreme informality. Stories may be either oral or written; this is independent of their relative formality, although written texts typically possess a greater degree of formality than spoken ones. But the essential similarity of oral and written narratives has facilitated their use as a means of discovering the differences between spoken and written texts in general (cf. Tannen, 1982; Beaman, 1984). In addition, stories typically have a recognizable beginning and end, setting them neatly off from other discourse. Finally, they constitute a genre with which both children and adults are familiar.

What exactly is a narrative? Definitions by various

authors differ with respect to details, but all agree that its essence lies in the recounting of events that follow each other in time. This is inherent in the passage from de Beaugrande (1980) quoted above, concerning the "ordered directionality of linkage" characterizing narrative discourse. Researchers approaching the subject from a variety of perspectives have all stressed this point (e.g. Labov & Waletzky, 1967; Labov, 1972; Prince, 1982; Polanyi, 1985). Labov (1972; 360), for example, defines a "minimal narrative as a sequence of two clauses which are temporally ordered: that is, a change in their order will result in a change in the temporal sequence of the original semantic interpretation." Compare this to Prince's (1982; 4) definition: "narrative is the representation of at least two real or fictive events or situations in a time sequence, neither of which presupposes or entails the other." Prince follows this up by stating that "many people would agree that any representation of non-contradictory events such that at least one occurs at a time t and another at a time t1 following time t constitutes a narrative (however trivial)" (145).

What these passages make clear is that the most basic of narratives has little resemblance to what most people are accustomed to thinking of as stories, but amounts simply to a piece of narrative discourse (as defined above).

A few remarks on terminology will be appropriate here. I will often use 'narrative' and 'story' more or less

synonymously; this is not the case universally. For example, Peterson & McCabe (1983) use 'narrative' to denote the recounting of real events (in fact, of personal experience) and 'story' to denote fictional accounts.<5> Polanyi (1985; 9-10) appears to use 'narrative' to denote all text types composed primarily of narrative discourse, of which stories are but one: "stories, along with plans, simultaneous 'blow-by-blow' descriptions, generic narratives about 'the way it used to be' or 'what usually happens' and reports of past activities are all narratives-- kinds of discourse organized around the passage of time in some 'world'." But Polanyi clearly does not define 'story' as necessarily fictional, as all the stories she analyzes are true. With regard to the data to be presented here, there is little evidence of any need to consider the distinction between fictional and non-fictional stories, when examining linguistic structures; what is marked is the difference between visually prompted and unprompted stories (see Chapters IV and V for discussion).

While some research on stories concentrates on their fundamental structure, other research is more concerned with other aspects of their nature, e.g. content, affective value, suitability in various contexts, and so on. One type of representative of the former approach is the story grammar, such as that of Rumelhart (1975). Rumelhart attempts to construct a generative story grammar, by analogy to sentence grammars. He formulates "syntactic rules", as

in (2.1), and "semantic rules", as in (2.2).

2.1 Rule 1: Story $\rightarrow$ Setting + Episode (p. 213)

2.2 Rule 1': ALLOW (Setting, Episode) (p. 214)

He elucidates Rule 1' as follows:

Semantically, the setting forms a structure into which the remainder of the story can be linked. It plays no integral part in the body of the story and under certain conditions can be eliminated without adversely effecting [sic] the story. (214)

The construction of a story grammar is an ambitious project. But, as Morgan & Sellner (1980) point out, Rumelhart's "grammar", although formally modelled on sentence grammars, differs fundamentally from them. For one thing, the story grammar is intended to generate not actual texts but abstract plot structures. Both the "syntactic" and the "semantic" rules have this effect. As Morgan & Sellner remark, "the question arises of the need for Rumelhart's two separate systems, because both are really systems of content, not form" (189). Rumelhart never actually concerns himself with the linguistic form of stories, and his story grammar makes no attempt to account for their linguistic characteristics.

By contrast, the work of Labov (1972) does concern itself with the linguistic structures to be found in stories, and in particular, in the various subparts of stories. The six main elements that a narrative may contain are: Abstract, Orientation, Complicating Action, Evaluation,

Result, and Coda. Labov says "we can also look at narrative as a series of answers to underlying questions:

- a. Abstract: what was this about?
- b. Orientation: who, when, what, where?
- c. Complicating action: then what happened?
- d. Evaluation: so what?
- e. Result: what finally happened?

Only c, the complicating action, is essential if we are to recognize a narrative..." (370). As Labov points out, the coda does not answer any questions (it simply serves to bring the narrative back to the present time), and thus it is less likely to occur than the other elements.

Labov shows the structure of a narrative to constrain the kinds of linguistic devices used by the speaker. In general, he shows, narrative discourse is characterized by marked syntactic simplicity: "The fundamental simplicity of narrative syntax is not confined to the stories of preadolescents. Large sections of narratives told by adults will show the same pattern. Narrative as a whole contrasts sharply with ordinary conversation, which shows a much more complex structure" (377). But the evaluation section tends to be much more complex in structure than the rest of the narrative, and thus resembles ordinary conversation more closely. Certain linguistic structures are found relatively frequently in the evaluation section but not in the other narrative sections; these include quantifiers, verb auxiliaries, comparative constructions, and embedded (i.e.

subordinate) clauses, even multiply embedded ones. Such items are rare in the primary narrative (as opposed to evaluative) sections of a story.

Labov analyzes primarily non-fictional "narratives of personal experience" (354), but it seems probable that his generalizations concerning the simplicity of narrative syntax apply to all types of narratives. Certainly, the data to be presented here in Chapter IV would seem to support this view, rather than de Beaugrande's (1980) statement that subordinate constructions should be frequent in narrative (cf. Fn. 1).

Thus far, we have considered some aspects of the structure of narratives. Much research, though, has been devoted to other elements of a story's nature (e.g. Prince, 1982; Polanyi, 1982, 1985; Stein, 1982). The quality of a story is judged not only linguistically but also on the basis of its plot, its relevance to a given context, etc. Prince (1982; 160) says,

The narrativity of a text depends on the extent to which that text fulfills a receiver's desire by representing oriented temporal wholes, involving some sort of conflict, made up of discrete, specific and positive events, and meaningful in terms of a human project and a humanized universe.

Polanyi (1985; 33) goes further, when she claims that the relevance and "pointedness" of a story are part of its very definition:

1. To be a "story" at all, a linguistic text must encode a specific past time narrative description of the goings-on in a unique past time storyworld over a period of time. (A "narrative" description must include event propositions which encode

instantaneous occurrences which took place at unique, discrete moments in the history of the storyworld.)

2. The story must have a "point". Cultural initiates must be able to infer meaning from the changes of state in the storyworld brought about by the key events.

3. Linguistically, a story must be structured conventionally. It must include both Main Line Event Clauses and contextualizing state clauses. Evaluative meta-information must be present so that story recipients can separate the most salient states and events from the others, thereby limiting the amount of inferencing necessary to find "the point".

Thus, according to Polanyi, a story that is told for no reason, that does not fit into the context (however widely the context may be defined in a given case<6>), is defective. Bear in mind that, for Polanyi, stories are but one type of narrative (i.e. text composed of narrative discourse); a putative story without a point might for her be some other type of narrative. Labov (1972; 366) also deems pointless stories to be defective when he remarks that storytellers are constantly on the alert to avoid getting the response "so what?"; similarly, Prince (1982), as cited above, notes the primacy of the receiver's needs in making an evaluation of a story.

This point is also highlighted by Stein (1982), who discusses various concepts that have often been considered to be necessary if a text is to be recognized as a story, or as a "good story". She found that, for example, the presence of goal-based sequences was not necessary for a text to be deemed a story, but that if these were lacking, a reason for this lack must be provided (e.g. that the

protagonist was for some reason not in a position to make plans); otherwise, the text will not be adjudged to be a story (but rather some other type of narrative text). In general, she finds that "story" is a fuzzy concept (cf. de Beaugrande (1980) on the subject of text types in general, as cited above), and that "the set of features used to define a story may be dependent upon the context in which the story occurs" (501). To an even greater degree, whether a story is judged to be good or not depends crucially on the story recipient himself, and his own requirements in the relevant context.<7>

The studies that have just been described here deal only indirectly with the linguistic aspects of story construction. Thus, they are not directly relevant to the problem considered in this thesis. When stories are elicited (as opposed to being produced spontaneously), then the entire context of the task provides point and relevance to the stories. We are not concerned here with how "good" the stories are but with certain linguistic aspects of their structure.

In particular, we are interested here in the use of conjunctions in stories as opposed to certain other text types. As all the researchers in this field stress the crucial temporal nature of narrative, one would expect temporal connectives to be frequent in this text type. De Beaugrande (1980) also stresses that a variety of causal relationships are characteristic of narrative; possibly this

is related to the preference for goal-based sequences (Stein, 1982). Thus one might predict that causal conjunctions will also be frequent. In particular, the above-mentioned studies lead one to hypothesize that frequent causal links may be one feature distinguishing stories from other types of narrative texts. (For further discussion of the nature of the various types of conjunctions see Chapter III.) Given that descriptive discourse should comprise a relatively small portion of these texts,<8> we would expect additive conjunctions to be infrequent.<9> The results found in the examination of an actual corpus of discourse will be detailed in Chapters IV and V.

2.3 Acquisitional Studies

The development of story production by children of various ages has been widely studied. For the reasons described in Section 2.2, stories are a relatively easy type of text to collect. In the case of young children, there are certain text types with which they are not yet familiar, but narrative, like conversation, is a type they already know well. (Although the form of the narratives they know, as we shall see, may differ from the norm.)

Studies of children's text production can be roughly divided into two groups: those that examine particular linguistic devices used by children to establish cohesion in

texts (especially stories) (e.g. Hedberg, 1984; Romaine, 1985; Gopnik, 1986) and those that examine more large-scale aspects of text structure and global organization (e.g. Leondar, 1977; Applebee, 1978; Umiker-Sebeok, 1979; Snow & Goldfield, 1982; Cook-Gumperz & Green, 1984). Certain larger studies, like those of Peterson & McCabe (1983), Butters (1984), and McTear (1985), incorporate both types of research. We shall consider here various aspects of children's discourse (not only, but primarily, narrative) as revealed by these studies.

In general, it has been found that the links between the elements in young children's stories tend to be fairly weak (or even nonexistent). Applebee (1978) shows that this type of weak linkage obtains not only globally, between the various plot elements, but also linguistically, between actual sentences of a text. Both coherence and cohesion are low in small children's texts. As their age increases, children use increasingly sophisticated organizational structures, as well as using cohesive devices more appropriately and more often. Applebee relates children's organization of stories to their general cognitive development, maintaining that stories are organized according to the same principles that the children use to organize concepts in general.

Cook-Gumperz & Green (1984) suggest a different cause for the weakly linked nature of children's stories, at least in our culture. They point out that the kind of story with

which children in our culture tend to be most familiar is the picture book. Most children have little experience with oral tales, according to Cook-Gumperz & Green, at least not in the context of what they recognize as story-telling. (One would assume that children encounter narratives of personal experience during conversation, but they may not know that these can also be called "stories".)

Picture books tend to be organized around the illustrations; frequently the text merely serves as commentary on the pictures. So the story tends to be presented as a series of episodes, each one of which is centred around a picture. Cook-Gumperz & Green hypothesize that the episodic nature of children's stories may be the result of their being modelled on story books. The episodes of a child's story may be more or less unrelated to each other. But, as Cook-Gumperz & Green stress, this weak connectedness is also characteristic of certain types of picture books with which children tend to be very familiar (e.g. Richard Scarry books).

Obviously, exposure to story books is a very culture-specific factor; whether stories told by children in other cultures differ in some specific, culturally determined way from the stories of children in our culture I do not know. Some kind of cross-cultural comparison would be interesting. The fact that children's texts in general--not just stories-- seem to be characterized by weak links leads one to regard Cook-Gumperz & Green's claim with

caution. Nevertheless, it is always possible that the influence of books is a text-type-specific factor reinforcing other more general factors and thus contributing to the episodic nature of stories in particular.

Regardless of whether stories in particular are influenced by children's exposure to picture books, it appears that a certain episodic tendency is a characteristic of young children's texts in general. For instance, McCutchen & Perfetti (1982) found that young children's texts-- both written and oral, expository as well as narrative-- have what they call a "list-like" quality, with weak links between the elements of the text, as between individual sentences. Thus, in a text by a young child, each sentence may be connected cohesively with its predecessor and its successor, but not with any at a greater distance; in an older child's text, there will be a network of cohesive ties, making the text a cohesive whole. The list-like tendency is stronger in the expository texts, as they are a type less familiar to the children.<10>

Similarly, McTear (1985) shows that in the conversation of children about four years old most exchanges are closed; that is, they consist of an initiation and a simple response which does not serve to initiate further dialogue. The result is that there is little connection between the exchanges except at the level of the overall topic; the conversation lacks continuity. At a later age (late five to six years), the children in his study are able to produce

more globally connected discourse, maintaining longer exchanges, and making links back to previous utterances both of their own and of their partner's.

Since conversation is the most frequently used text type, one would expect children to master it earlier than other types. Thus, they seem to establish widespread connexity in conversation at a somewhat younger age than in narrative, and especially, expository texts.

Another aspect of the episodic nature of children's texts is discussed by Peterson & McCabe (1983). They find that young (i.e. four to five years old) children's stories contain proportionally more temporal linkages and fewer causal ones than those of older children. "Most relationships [between events in a narrative] produced by young children are temporal. That is, events in different multiple-structure narratives do not influence each other in any way: they merely occur successively or simultaneously" (101). In the stories of the older children (aged about 10), temporal relationships make up a smaller proportion of the total, and there is a larger proportion of causal ones. As temporal linkage is in some ways less complex than causal linkage (see Section 3.4), the ratio of temporal to causal connections is another manifestation of the relatively weak linking in young children's discourse. (This disproportionate favouring of temporal over causal links, as compared to adults' discourse, is characteristic of children's discourse in general, not just stories; see

Chapter V.)

An important characteristic of children's narratives, as shown by Butters (1984), is the degree to which they are influenced by the norms of conversation. Conversation is a dyadic (or even polyadic) text type; narrative, on the other hand, is typically monadic (in our culture, at any rate^{<11>}). Not only is a narrative expected to have the form of a monologue-- the recipient(s), although expected to indicate continued attention, is not expected to contribute contentful discourse-- but it should also be completely independent of the context of utterance, in the sense that a separate "storyworld" is created by means of the narrative.^{<12>} Cohesion and coherence should be established entirely within the text, and reference should not be made to the actual context of production; "the text itself must... create a universe of discourse through the use of specific referential devices" (Butters, 1984; 182). Thus, a given story should ideally be fully comprehensible to any recipient in any context; it should be an independently standing text.

Young children, though, do not yet realize this. They frequently use devices characteristic of conversation, a text type which is not only dyadic but wedded to the discourse context. Thus, they tend to favour a turn-taking approach to constructing the story, rather than a monologue; as we found in this study too, they often need to be prompted to continue speaking. They make exophoric

references, e.g. to picture stimuli, so that the story is not independent of its context. Similarly, they are unaware of the convention of the "ignorant audience", that is, that when telling a story one must include even information that the recipient is already aware of. (This, of course, varies from child to child, as Gopnik (1986) shows; see discussion below.)

As Butters points out, it is not surprising that young children's stories are strongly interactive, as much of the discourse they have been exposed to at this stage is of an interactive, highly contextualized nature. This is not only true of conversation but also of stories. Snow & Goldfield (1982) have shown that stories told to small children tend to have a dyadic structure. Not only does the storyteller allow and even encourage questions and comments from the child, but he himself also poses questions intended to discover whether the child has understood the story and to encourage such understanding. Thus, the stories presented to young children are in some ways aberrant from the norm for stories in our culture. Whether this is the major factor underlying the aberrant nature of the children's own stories is not clear; one must also take into consideration their general level of mastery of text structure, as discussed above.

The work of Umiker-Sebeok (1979) is based on that of Labov (Labov & Waletzky, 1967; Labov, 1972) discussed above. She examines the use of the six basic narrative elements--

abstract, orientation, complication, evaluation, result, coda-- as well as of introductions (used to insert the story into the discourse context) in the intraconversational narratives of children three to five. These narratives tend to be very short, many comprising only one or two clauses, and, especially among the three year olds, many contain only the complication element. (It will be remembered that this is the only obligatory section.) The length of these stories increases with age and so does the number of elements typically occurring. In the stories of the three year olds, only one element other than the complication tends to be used, usually an introduction but occasionally an evaluation or an orientation. Among the fours, introductions and orientations become more frequent, evaluations, abstracts, and results being rare. By age five, all these elements occurred more frequently; codas, however, were not used by the children. In addition, the variety of different types of each element also increased with age. Also as children became older, the degree to which they responded to narratives told by others-- making comments or asking for clarification-- increased significantly.

The studies I will consider next examine in greater detail children's use of particular cohesive devices in story production.<13> For example, Hedberg & Stoel-Gammon (1984) investigate the use in children's stories of Halliday & Hasan's (1976) five major types of cohesive ties:

reference (i.e. use of pronominals, definite articles, demonstratives and comparatives), lexical cohesion, conjunction, substitution, and ellipsis. All the children in their study (aged two to five) used some cohesive devices in their stories. Most examples of cohesion used fell into the categories of reference and lexical cohesion. The use of conjunction to establish cohesion was moderately frequent, and substitution and ellipsis were rare. While the percentage of items used cohesively remained about the same at all ages, the sophistication of the types used increased with age; likewise, the proportion of unsuccessful uses of cohesive devices decreased with age. Analyzing the same corpus, Hedberg (1984) found that the use of cohesive devices was correlated not only with age but also with the successful encoding in a story of text-connecting inferences, and with the level of narrative organization (cf. Applebee, 1978). In particular, attainment of a more sophisticated level of narrative organization seems to entail greater mastery over a variety of textual devices.

Like Hedberg & Stoel-Gammon, McCutchen & Perfetti (1982) find that reference and lexical ties make up the most frequently used cohesive devices in their youngest children's (aged seven) texts (written narratives and expository texts). They are proportionately much more frequent in the expository texts, reflecting what we saw earlier, viz. that more difficult text types are characterized by a lack of linguistic sophistication. In

the texts produced by the oldest children (aged about 13), the proportions of the various cohesive devices are much more even; likewise, the proportions in narratives and expository texts are very similar. The particular device of conjunction is used most frequently by the nine year old group in their study, more frequently in narrative than in essays.<14>

Gopnik (1986) (analyzing the same corpus as Butters (1984)) also examines a variety of cohesive devices that change in frequency with age. She investigates the use not only of devices that establish connexity within a story but also of delimiters, i.e. structures (like formal beginnings and endings) that set a text apart from other discourse and thus define the domain within which such connexity must be established. For example, the use of formal beginnings (e.g. once upon a time) increases with age<15>; not only that, but this use is directly correlated with the correct production of introductory noun phrases. That is, children who introduced their story with a formal beginning were also more likely to use as an initial NP a lexical NP with an indefinite article (as in once there was a little girl) than an NP with a definite article, a pronoun, or a proper name, all of which are less appropriate forms for the first mention of an entity.

With regard to the use of conjunctions, Gopnik finds that the frequency of temporal connectives increases with age (from four to six). The most commonly used temporal

connectives were and, then, and now.^{<16>} Not only do these connectives mark temporal links between sentences, but they also interact interestingly with verb features. For example, then and asymmetric and co-occur quite frequently with a change in the tense or aspect of the verbs in the conjoined clauses; that is, the verb in a clause headed by then, for example, will often (60-100% of the time, depending on age) have a different tense or aspect than that in the preceding clause. By contrast, symmetric and is not associated with a change in verb form. Thus, the encoding of temporal sequence is frequently associated with a change in verb-marking, whereas the encoding of simultaneity is not. The examples discussed here serve to give some impression of the complex relationships that can obtain between cohesive devices in a text. Each type of cohesive device does not operate as if in a vacuum but interacts with the other ones.

The research discussed in this section outlines certain basic characteristics of young children's texts. One of the most fundamental traits is that, in comparison to adults' texts, children's texts tend to lack cohesive density. Many reports reveal the weakly linked nature of children's discourse. Children's texts tend to be rather episodic as regards their organization; likewise, their linguistic cohesion tends to be relatively unsophisticated. Even among older children (aged seven to nine), an unfamiliar and complex text type will tend to be less cohesive than more

familiar ones, and the cohesive devices used will be less sophisticated.<17>

Nevertheless, by age five, say, children do have a grasp of a variety of textual devices which they are able to use to establish cohesion. Those text types that they have mastered they are able to characterize by various means. The device of conjunction-- the particular focus of this study-- is one that children have been shown to use in this context; however, we have seen some evidence to the effect that it is one that they have not yet fully mastered, especially in comparison with such devices as lexical cohesion and reference (devices that rely to a great degree on vocabulary choice, rather than syntactic structure). In particular, we might expect that the weak cohesion characteristic of children's texts may manifest itself in a use of conjunctions that have less semantic content (e.g. and) than those used by adults in similar contexts; similarly, we may find, as the work by Peterson & McCabe (1983) suggests, that causal connections are less frequent in children's texts than additive and temporal ones, as compared to adults' texts (see also Section 3.4).

Notes to Chapter II

1. Data from the present study (see Chapter IV) show that de Beaugrande's prediction concerning the frequency of subordinate structures in narrative is not borne out. Subordinate structures are, in fact, rather less frequent in narratives than in conversation (see also Labov, 1972). De Beaugrande deals almost exclusively with written texts, which may well have something to do with his view (cf. Beaman, 1984). For further discussion of this point, see Chapter VI.
2. The use of the terms 'discourse' and 'text' was discussed in Chapter I (Fn. 1). The mass noun versus count noun distinction suggested here is one that I believe to be useful inasmuch as one can make the claim that there is a limited number of discourse types that can be combined in various ways to make a much larger number of text types. As we have seen, other factors also contribute to the defining of text type, e.g. context, communicative intent, etc. These factors may be less important in defining discourse types, which may well be definable in more purely linguistic terms.
3. It is also possible that explanatory discourse is a basic type, with certain defined properties. This possibility will not be discussed in any greater detail here, though. But the fact that most explanations

collected in this study show evidence of having a fair proportion of narrative discourse (see Chapter IV) may militate against this hypothesis; in fact, many adults structure explanations as narrative texts (see also Linde & Labov, 1975; Polanyi, 1985). Another possibility might be that the characteristic hierarchic contingent structures may in themselves constitute a particular discourse type; in fact, this seems rather more likely than that explanation per se should be a type of discourse.

4. Related to de Beaugrande's acknowledgment of the "especially episodic and diverse range of sources for admissible knowledge" in conversation is Gopnik's (1986) characterization of the cumulative nature of the presupposed knowledge base for a given conversation. Anything that has been mentioned during the conversation or that is present in the discourse context can be presupposed by one speaker to be part of his hearer's knowledge. This contrasts with narrative, during the construction of which nothing (apart from general human and cultural knowledge) can be presupposed and everything must be made explicit. There is a convention that a story recipient knows nothing about the events in the storyworld until he has been explicitly told of them.
5. Peterson & McCabe consider that fictional and non-fictional narratives may differ structurally (at

least for children):

Two relationships may exist between factual narratives and fictional stories. On the one hand, fictional stories may be more complex than personal narratives because the child is not tied down by the need for factual reporting of events. Thus, more attention can be paid to the overall structure of the story. On the other hand, imaginary tales may be less complex because the child may have ordered the real events and perhaps even previously reported them. This would allow the child to devote his attention to the organization of the narrative. (23)

They conclude that there is more evidence to show that non-fictional stories will be more complex. Our story corpora, from both adults and children, comprise both fictional and non-fictional tales, the fictional group including both familiar stories and new ones invented for the occasion. Complex and simple examples are to be found among both the fictional and non-fictional groups; the variability seems to result more from an individual's story-telling skills than from the real or imaginary nature of the story events.

6. Certain types of stories, as Labov (1972; 370) points out, are appropriate in any context: "Whenever people are speaking, it is relevant to say 'I just saw a man killed in the street.' No one will answer such a remark with 'So what?'" Thus, stories about death, danger, and extraordinary events are always received well.
7. Stein points out that certain aspects of a story's nature, e.g. its affective content, can result in similar responses but differing judgments of quality from different text recipients. For instance, a

frightening story may be liked by one recipient and disliked by another one precisely because it is frightening.

8. The stories collected are relatively unplanned; thus, one would expect that the storytellers would concentrate on the narrative portions of the text, rather than on description. With more time to plan, they might tend to produce more descriptive elaboration.
9. One other factor that may play a role, though, is that certain stories were told in response to picture book stimuli (see Chapter IV). It is possible that the presence of these visual stimuli would result in the prompted stories containing more descriptive elements than the unprompted ones.
10. The youngest children in McCutchen & Perfetti's study were about seven years old, i.e. in Grade Two. At this age, although very experienced with conversation and stories, they will not yet have had much exposure to expository discourse in the shape of essay-writing, etc.
11. For information on a culture (Northern Athabaskan) in which narrative is a more interactive text type, see Scollon (1979; Scollon & Scollon, 1984). For a cross-cultural approach to narratives, see Grimes (1975, 1978).
12. This statement that a story must be independent of its

context of production is not opposed to the statement in Section 2.2 that a story must fit appropriately into the discourse context. On the one hand, a story is dependent on its context in that it must not appear to be irrelevant or pointless; its topic must link up somehow with that of the preceding discourse (unless, as we have seen, its topic is of overriding interest). Yet on the other hand, the story must be a separate linguistic entity (i.e. text) with no linguistic (i.e. cohesive) links to the previous discourse; cohesion must be established entirely internally to the text.

13. For a bibliographic survey of cohesion in children's discourse, see Zammuner (1986).
14. Vieira & Dillinger (1985) got quite different results in an examination of texts by Portuguese-speaking children the same age as McCutchen & Perfetti's subjects. They found conjunction to be the most frequently used cohesive device among the youngest children (age eight); this decreased in frequency with age. The frequencies of the referential and lexical ties changed very slightly; Vieira & Dillinger hypothesize that children have already mastered them fully before age eight. Ellipsis is found to increase dramatically with age. The end result, though, is that older children use the various devices in more even proportions than younger children, just as McCutchen & Perfetti found. But the finding that young children

speaking different languages use different proportions of the various cohesive devices, even when the basic types are the same cross-linguistically, is interesting. Whether it stems from language-specific textual factors or from other linguistic factors is a question that merits further research.

15. Interestingly, the frequency of formal endings decreases with age. Gopnik hypothesizes that this is because the beginning of a story is a boundary that has actual linguistic consequences on the text that follows: it is a boundary across which cohesion cannot be established. Thus, a formal beginning shows that the speaker intends to construct a specific type of text (a story) and is delimiting it formally from the preceding discourse. But a formal ending (e.g. and they lived happily ever after) does not have any effect on the linguistic structure of the text that follows. It simply indicates that the preceding text has been completed; this requires a lesser degree of sophistication than the use of the formal beginning. In fact, Gopnik found that a formal ending is often used by young children as a means of escaping at an arbitrary point from a story in which they have become hopelessly entangled.
16. I do not consider now to be an actual conjunction, but rather a deictic temporal adverb; thus, the use of now will not be examined in this thesis. Nonetheless, it

undoubtedly serves as an intersentential link, as do other temporal markers of various categories.

17. This phenomenon is found among adults as well as among children. The adults in this study, for example, produced much less cohesive (and coherent) examples of game explanations-- a difficult text type-- than they did of stories (see Chapter IV).

M. Gopnik (p.c.) has suggested that it is possible that some text types actually require the use of more sophisticated types of cohesive ties than others do. Perhaps, then, it is possible to create a (reasonably) cohesive narrative using only the devices of reference, lexical cohesion, and conjunction, whereas the successful establishment of cohesion in an explanation requires the use of more sophisticated ties. If this hypothesis is valid, it would suggest a linguistically based explanation (or at least a partial explanation) of why certain text types are more difficult than others. In other words, maybe we have been approaching the matter backwards: it is not that speakers have more trouble creating cohesion in more difficult text types, but rather that these text types are more difficult precisely because speakers have trouble creating cohesion in them. This is an intriguing possibility.

CHAPTER III

CONJUNCTION

3.0 Introduction

In this chapter we will discuss the nature of the process of conjunction and some of the properties of individual conjunctions. The syntactic, semantic, pragmatic and textual aspects of conjunction will be examined. We will first consider the question of how many types of conjunctions there are, insofar as they show different syntactic effects; various proposals in the literature will be considered and an alternative will be proposed. The syntactic structures of the different conjunction processes will then be examined.

Next the semantic and pragmatic characteristics of various conjunctions-- in particular, the ones found in the corpus of data examined in Chapter IV-- will be discussed. In Section 3.3 various studies on the textual function of conjunctions will be considered.

In the final section of this chapter, the literature on children's acquisition of conjunctions will be examined and their relevance to the study presented in this thesis considered.

3.1 Syntactic Aspects of Conjunction

3.1.1 Classes of Conjunctions

In traditional grammars conjunctions are divided into two classes, coordinate and subordinate conjunctions. The problem is that in English it is not easy to distinguish between these two classes. Finite clauses headed by what are traditionally described as coordinate conjunctions-- i.e. and, or, but and (somewhat marginally) nor-- do not differ in surface word order, verb type, etc., from finite clauses headed by so-called subordinate conjunctions-- i.e. presumably all others-- as is shown in (3.1).

3.1.a John bought purple socks and Mary bought a red hat.

b John bought purple socks because Mary bought a red hat.

There is no immediate indication that the sentence in (3.1.a) is in any way structurally different from the sentence in (3.1.b), yet they are traditionally held to be examples of coordinate and subordinate conjunction, respectively.

This contrasts with the situation in a language like German, for instance, where there is an obvious syntactic difference between coordinate and subordinate structures. Main clauses (including coordinate clauses) exhibit verb-second word order, whereas subordinate clauses of all kinds are typically verb-final.<1> The examples in (3.2) are translation equivalents of those in (3.1); the verbs are

capitalized to highlight the different orders.

3.2.a John KAUFTE violette Socken und Mary KAUFTE einen roten Hut.

b John KAUFTE violette Socken, weil Mary einen roten Hut KAUFTE.

In German, then, there is an obvious method of determining whether a given conjunction is coordinate or subordinate; one must simply determine whether it induces verb-final word order or not. In English, of course, this diagnostic is not available.

Note that in German there is no necessary difference in the semantic content of coordinate and subordinate conjunctions. Both types can express similar semantic relationships, as is the case with weil and denn, which have about the same degree of semantic similarity as their English equivalents, because and for. Nevertheless, weil is subordinate and denn coordinate.<2> Note that for in English has often been suggested to be coordinate also. (Further evidence in favour of this will be presented below.)

3.3.a Ich will keine Torte mehr, weil ich völlig satt bin.

b I don't want any more cake, because I'm full up.

3.4.a Ich will keine Torte mehr denn ich bin völlig satt.

b I don't want any more cake for I'm full up.

This situation in German suggests that there is no reason to suppose that coordinate conjunctions necessarily

have low semanticity (cf. and, or) as compared with the greater semantic content of the so-called subordinate conjunctions (cf. while, after). We need not assume that there is any semantic basis to the coordinate/subordinate distinction. Rather, the distinction, if any, must be syntactic in English, as it is in German.

How, in general, are subordinate clauses distinguished from matrix clauses? Traditionally, subordinate clauses are said to be dependent on their matrix clauses in a way that conjoined coordinate structures are not. Sometimes this is held to mean that a subordinate clause cannot stand alone as a main clause can, i.e. that a well-formed utterance cannot consist only of a subordinate clause. Clearly, this is not always the case. Certain subordinate structures, e.g. adverbial clauses (the ones under study here) and control clauses, can comprise well-formed utterances, given the right discourse context (3.5 and 3.6). Relative clauses, though, cannot stand alone, regardless of context (3.7).

3.5 A: Why didn't you go to NELS this year?
B: Because they didn't accept my abstract.

3.6 A: What is it you want?
B: To wring that fool's neck.

3.7 A: Which man booed you?
B: *Who was sitting to the right of the podium.
cf. The one who was sitting to the right of the podium.

Note also, in this context, that in order to be a

well-formed utterance a clause headed by a traditional coordinate conjunction also requires a suitable discourse context, as in (3.8).

- 3.8 A: You never buy me flowers.
B: And you never buy me diamond earrings.

Conjunction is, after all, a linking process and there must be something in the discourse context for an utterance to be linked to. Thus, it seems that dependence is a vague and unhelpful concept for diagnostic purposes.

The work of Quirk & Greenbaum (1973) is much more relevant here, inasmuch as they give several linguistic diagnostics for subordination in English. Their overall claim is that "subordination is a non-symmetrical relation, holding between two clauses in such a way that one is a constituent or part of the other." (p. 309) How does one determine whether one clause is a constituent of another or not? As has been stated, Quirk & Greenbaum provide a number of tests (pp. 255, 268, 313).

For the type of clauses under consideration here, i.e. finite clauses headed by lexical connectives, perhaps the most important diagnostic is what one might call preposability. A clause headed by a coordinate conjunction may not be preposed before the clause it is conjoined to; placing it there results in an ill-formed structure, as in (3.9). A clause with a subordinate conjunction may occur either before or after the clause it is conjoined to; either order is well-formed (3.10).

- 3.9.a Bill was furious but Mary laughed uproariously.
b *But Mary laughed uproariously, Bill was furious.

- 3.10.a Bill was furious although Mary laughed uproariously.
b Although Mary laughed uproariously, Bill was furious.

Another diagnostic concerns whether a conjunction may be used phrasally, i.e. to connect words or phrases, as well as clausally, i.e. to connect clauses. If so, it is (usually) coordinate (3.11); if not, it is subordinate (3.12).

- 3.11.a Laura absconded to the Caymans or the Seychelles.
b Tony was nobly born but rather boorish.

- 3.12.a *The traffic light turned red after amber.
b *Bob was on the defensive because in the wrong.

Quirk & Greenbaum point out that the subordinate conjunctions if and though may be used phrasally, like coordinators:

- 3.13.a I found the experience enlightening if somewhat hazardous.
b She is an eccentric though hard-working employee.

The diagnostics discussed above are the major ones for distinguishing coordinators from subordinators (in Quirk & Greenbaum's terminology). But it should be pointed out here that Quirk & Greenbaum actually posit three classes of connectives in English, not just two. The third group comprises what they call conjuncts.<3> This class includes

such connectives as yet, then, so and for. These differ from subordinators in that clauses with conjuncts may not be preposed, i.e. cannot occur sentence-initially.

3.14.a Louise went on the rampage so Linda dialed 9-1-1.

b *So Linda dialed 9-1-1, Louise went on the rampage.

Conjuncts differ from coordinate conjunctions in that a coordinator may precede a conjunct but not another coordinator, e.g. and then, but yet versus *and but, *or and. Note that conjuncts are inconsistent with regard to the phrasality diagnostic; yet and then may be used phrasally, whereas so and for may not.

3.15.a The light turned red then green.

b They were poor yet happy.

c *Wet so cold, we trudged wearily home.

d *He was impatient for in a hurry.

Thus we see that Quirk & Greenbaum's tripartite classification of connectives results in a certain amount of inconsistency within the subordinator and conjunct classes. The members of these classes do not all behave the same way with regard to certain diagnostics.

One can, however, come up with a four-part division that results in greater intra-class consistency. This system is also based upon Quirk & Greenbaum's diagnostics: specifically, whether the connective in question may or may not be used phrasally, and whether a clause containing that connective may or may not be preposed. We have seen that Quirk & Greenbaum's coordinators may not be preposed (i.e.

clauses headed by these connectives may not occur before the clauses to which they are conjoined) and may be used phrasally (i.e. to link words or phrases). Subordinators are "reversible" (or preposable) and generally may not be used phrasally, but there are exceptions. The so-called conjuncts are not preposable and vary according to whether they may be used phrasally.<4>

If these two characteristics are regarded as features-- [preposable] and [phrasal]<5>-- with plus and minus marking, then there are found to be four possible combinations of features: [+preposable, +phrasal], [-preposable, -phrasal], [+preposable, -phrasal], and [-preposable, +phrasal]. Thus, if this feature system has any real basis, there should be four classes of conjunctions in English, corresponding to each of the possible combinations. This does, in fact, appear to be the case. In (3.16) the conjunctions found in the adults' corpus studied here are shown, categorized according to their feature-markings. (Some that are not found in the corpus are included but placed in angle brackets.)

(3.16) Syntactic Classes of Conjunctions in Adults' Corpus

1. [+preposable, +phrasal]
if, though
2. [-preposable, -phrasal]
except, <for>, <only>, so
3. [+preposable, -phrasal]
after, as, because, before, <lest>, once, since, unless,
until, when, whereas, while
4. [-preposable, +phrasal]
and, but, (either) or, then, yet

Each of the four possible classes of conjunctions is, in fact, represented in the corpus of data.

Although this classification system results in intra-class consistency with regard to Quirk & Greenbaum's crucial diagnostics, it leads one to pose some new questions. Two of the four classes, Classes 1 and 2, contain very few members compared to the other two; most conjunctions fall into Classes 3 and 4. Table 3.1, in which the frequency of conjunctions classified according to both syntactic and semantic categories is shown (with the semantic classes being Additive, Adversative, Temporal and Causal (see Section 3.2)), reveals that Class 1 conjunctions are not only few in number but also infrequent as a class. Class 2 conjunctions are shown to be more frequently used, but this frequency rests entirely on the frequency of the single conjunction so.

Table 3.1

Syntactic and Semantic Classes of Conjunctions in
Adults' Total Discourse

	Add.	Adv.	Temp.	Caus.
1 n=96 4.3%		though n=8 .4%		if n=88 3.9%
2 n=356 15.9%		except n=2 .1%		so n=354 15.8%
3 n=387 17.2%		unless whereas n=3 .1%	when after while before as until once since n=166 7.4%	because since n=218 9.7%
4 n=1407 62.7%	and or either n=534 23.8%	but yet n=154 6.9%	and then n=719 32%	
n=2246	n=534 23.8%	n=167 7.4%	n=885 39.4%	n=660 29.4%

The results obtained from the children in this study are even more weighted against Classes 1 and 2. This is less visible in terms of the numbers of different conjunctions of each class used-- cf. (3.17), in which it is shown that the children use the same Class 1 and Class 2 conjunctions as the adults-- than in the frequencies of the various classes.

(3.17) Syntactic Classes of Conjunctions in Children's Corpus

1. [+preposable, +phrasal]
if, though
2. [-preposable, -phrasal]
except, so
3. [+preposable, -phrasal]
after, as, because, before, till, when, while
4. [-preposable, +phrasal]
and, but, or, then

Table 3.2 shows the conjunctions occurring in the children's corpus, subdivided into their semantic and syntactic classes. It reveals that both Class 1 and Class 2 conjunctions are very rare in children's discourse, even rarer than in the adults'.

Table 3.2

Syntactic and Semantic Classes of Conjunctions in
Total Discourse of All Children

	Add.	Adv.	Temp.	Caus.
1 n=13 1.1%		though n=1 .1%		if n=12 1%
2 n=56 4.8%		except n=2 .2%		so n=54 4.6%
3 n=284 24.3%			when after while before as till n=45 3.9%	because n=239 20.5%
4 n=815 69.8%	and or n=166 14.2%	but n=108 9.3%	and then n=541 46.3%	
n=1168	n=166 14.2%	n=111 9.5%	n=586 50.2%	n=305 26.1%

Class 4 conjunctions are the most frequent in the speech of both adults and children; as this class is the one containing and, the finding is not surprising. Class 3 conjunctions, despite having the largest number of members, come in a distant second place. (The relative frequencies of the various types of conjunctions will be discussed in greater detail in Chapter 4.)

To sum up, Classes 1 and 2 contain few members and these are used relatively infrequently in discourse.<6> The Class 1 and 2 conjunctions seem to be the marked cases; that is, two plus values or two minus values for the features [preposable] and [phrasal] seem to constitute a marked combination. In the unmarked case, a plus value for one feature seems to call for a minus value for the other.<7>

As we shall see in Section 3.1.2, Class 1 will turn out not to be a genuine class but rather to be a construct of homophonous members (i.e. if and though) of Classes 3 and 4. Such homophony might stem from a diachronic process of reanalysis resulting in a member of one class being analyzed as a member of another class, but still retaining its original class membership as well. The members of Class 2, which seem to have a marked status, may also owe their existence to some process of diachronic change: possibly migrating from Class 3 to something similar to Class 4, but lacking the [+phrasal] marking. Whether the somewhat atypical feature values for these connectives account entirely for their lesser frequency, or whether the

correlation is coincidental, is at present a moot point.

The ideas that have been sketched out above clearly merit more research, both diachronically and synchronically oriented. They will not, though, be examined in any detail in this study.

3.1.2 Syntax of Conjoined Structures

In this section we will consider the nature of conjoined structures, and indicate the possible bases of the feature system discussed in the preceding section. In addition, and concurrently, various approaches to the syntax of conjunction will be considered.

In general, works on the syntactic aspects of conjunction have concentrated on the traditional coordinate conjunctions. Subordinate conjunctions have been relatively rarely examined in this context. This is not unrelated to the circumstance that many of the researchers in this area have been concerned with coordination as a general process, i.e. including phrasal coordination, rather than exclusively with clausal conjunction. The present study is, of course, not concerned with phrasal coordination.

Most syntactically oriented work on conjunction has been concerned with the nature of the elements that may be conjoined (i.e. how similar must conjoined elements be?), and with the processes associated with coordination, e.g. Gapping, Right Node Raising, etc.

Gleitman (1965), for example, one of the earliest

papers in this area, is principally concerned with the relation of conjunction (i.e. coordination) with such processes as pronominalization, NP deletion, negation, etc. She proposes grammatical rules for conjunction under these various conditions. Her primary interest is in the nature of repeated and nonrepeated material within a sentence:

One simple hypothesis motivates the form and organization of the rules for conjunction that will be given here: conjunction is one of the many syntactic processes that serve the purpose of indicating contrast or reducing repetition; a conjoined sentence that does not indicate contrast or reduce repetition has not served any purpose...
(Gleitman, 1965; 268-69)

(As the above quotation shows, Gleitman's interest leans somewhat towards what we would now consider the pragmatics of conjunction; the body of the paper, though, is dedicated to motivating various syntactic rules.)

Later works such as Dougherty (1970, 1971), Schachter (1977), Williams (1978), Gazdar (1981), and Munn (1987), intended both to bring research in this area into line with later theoretical developments⁸ as well as to account for problems left unsolved in earlier work, also concentrate on coordination, both phrasal and clausal. Specific problems, e.g. the necessity or otherwise for a rule of conjunction reduction (cf. Williams, 1978; Gazdar, 1981) are often addressed.

This particular type of problem is of relatively little relevance to the present study. For example, the question of what types of elements can be conjoined with each other (cf. Sag et al., 1985) affects this work little, inasmuch as

we have defined our area of interest as clausal conjunction; the conjuncts in such structures are necessarily both sentences.<9> Rather, I intend to address the question of what conjunctions actually are and what kinds of structures they occur in. This will lead us to a fundamental question: is there any principled reason to lump together what are traditionally called coordinate and subordinate conjunctions? Are there grounds for believing that the connectives listed above (in (3.16)) are inherently more similar to each other than they are to other similar items, e.g. sentence adverbs, discourse particles, or is this simply a matter of convention?

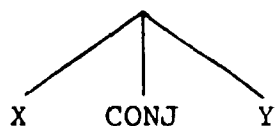
First let us consider the status of conjunctions as a word class or classes. Specifically, is there reason to believe that the different behaviour of the four classes posited above stems from their being members of four different categories?

Let us begin with the traditional coordinate conjunctions. It has long been assumed that members of this group, at least, form an individual class, often denoted by the term CONJ. This type of connective has always included those that can conjoin phrases as well as clauses. (As was indicated above, one primary concern has always been the formulation of the type of similarity that must hold between conjoined elements. With purely clausal conjunction, the similarity is obvious.) Let us assume, then, that the feature marking [+phrasal] is associated with the class

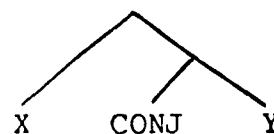
CONJ.

There has been considerable debate concerning whether CONJ is associated with ternary or binary branching structures; that is, is the conjunction a sister of its conjuncts, as in (3.18.a), or does it form a constituent with the second (or final) one, as in (3.18.b)? (To the best of my knowledge, no one has ever proposed that the conjunction is associated with the first conjunct in English; see below.)

3.18.a



b



Gleitman (1965) and Williams (1978) are among those who assume a structure like the former; Schachter (1977), Gazdar (1981) and Munn (1987) assume the latter structure, based on arguments originally advanced by Ross (1967). (The binary branching structure is also more in line with modern grammatical theory, following Kayne (1984); the ternary branching structure is thus undesirable for general theoretical reasons.) Ross (1967;90-91) cites various evidence supporting the constituency of the connective with the final conjunct. One of these pieces of evidence is based on the difference in acceptability between the structures in (3.19.b) and (3.19.c).

- 3.19.a John left, and he didn't even say goodbye.
b John left. And he didn't even say goodbye.
c *John left and. He didn't even say goodbye.

Thus, comparing intrasentential clausal conjunction with conjoined sentences shows that the conjunction is associated with the second clause.<10> By extrapolation, the same must be true for other types of conjuncts.

Ross also adduces evidence from German, where aber ('but') can occur within the second conjunct (as opposed to before it), but cannot occur inside the first conjunct.

3.20.a Sie will tanzen, aber ich will nach Hause gehen.
'She wants to dance, but I want to go home.'

b Sie will tanzen; ich will aber nach Hause gehen.

c *Sie will aber tanzen; ich will nach Hause gehen.<11>

According to Ross, this phenomenon also supports the hypothesis that conjunction plus final conjunct form a constituent. This evidence, though, is of somewhat dubious status, as other German conjunctions cannot occur conjunct-internally (cf. (3.21)).

3.21 *Sie will tanzen; ich und will nach Hause gehen.

It seems likely that aber in (3.20.b) is not a conjunction, but instead plays the role of a sentence adverb like however or on the other hand.

3.22.a She wants to dance; I, {however
on the other hand} want to
go home.

b *She, however, wants to dance; I want to go home.

Conjunctions like but are not the only items which cannot occur before the element to which they are linking their

clause; we see that the same is true of other cohesive expressions, like however.

A related (according to Ross) and more convincing case concerns the Latin conjunctive clitic -que, which can only be attached to the second conjunct in a conjoined structure; when used clausally, as in (3.23.c), it is attached to the first word of the second conjunct.

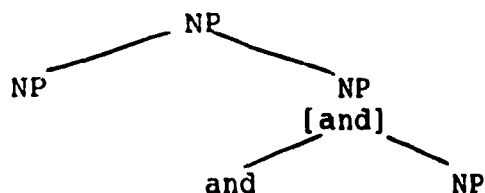
- 3.23.a puer puellaque
boy girl-and
'the boy and the girl'
- b *puerque puella
- c Cloelia Tiberim tranavit sospitesque omnes
C. Tiber swam-across safe-and all
restituit.
brought-back
'Cloelia swam across the Tiber and brought them all
back unharmed.'

Ross also cites phonological evidence for the constituency of the conjunction with the final conjunct, namely, that pauses will most frequently occur just before the conjunction in a conjoined structure, rather than after it or randomly before and after it. The mass of the evidence that he presents, thus, clearly indicates that the conjunction is linked to the final conjunct rather than to the first one, in languages like English.

What is the status of the conjoined structure? Is the node dominating the conjunction, say, of two NPs an NP or something other, e.g. a CONJP? There has been considerable debate over this question (as, indeed, over most questions concerning conjunction). Gazdar (1981), for example, adopts

the former position (also assumed by Gleitman (1965) and Schachter (1977)); he maintains that conjoined NPs would have the structure shown below (p. 158)<12>:

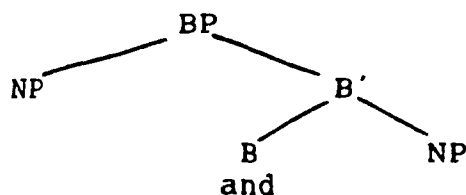
3.24



This would mean that (coordinate) conjoined structures do not fall into any one particular category but are a subtype of all the other categories, N, V, A, etc.

The opposing view, that a conjoined structure belongs to a completely separate category, is espoused by Munn (1987). His claim is that a conjoined structure like the one diagrammed above would have the structure shown in (3.25); B in his terminology stands for Boolean category (more or less equivalent to CONJ), and BP for Boolean Phrase.<13>

3.25

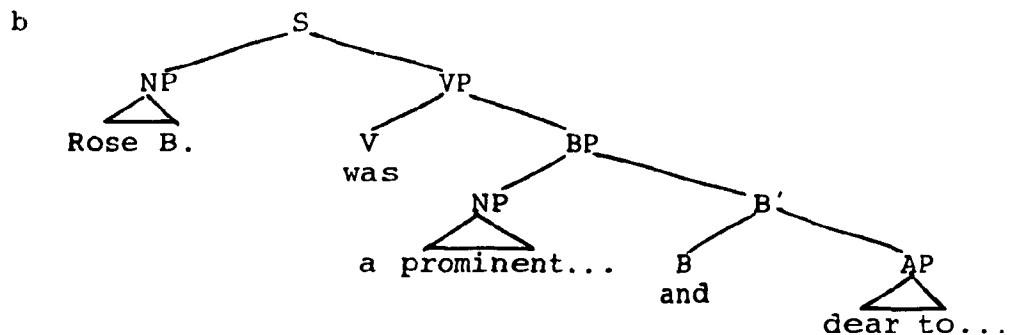


The element B is the head of the structure, with the first and second conjuncts being its specifier and complement, respectively. The specifier must be similar to the complement in some way that has not yet been fully defined (see brief discussion above). It is also true that a BP is

a rather protean category, partaking of the nature of an NP-- i.e. with regard to distribution, syntactic functions, etc.-- when it dominates conjoined NPs, of a VP when it dominates VPs, and so on. Thus, there are clearly still a number of unsolved questions to be answered with regard to this structure.

But note that, by positing a separate category BP (or CONJP), one avoids a question which is problematic for proponents of a structure like that in (3.24), namely, how to categorize a structure in which each conjunct belongs to a different category, as in (3.26).

3.26.a Rose Busshe was a prominent philanthropist and dear to all who knew her.



In the sentence above, the two conjuncts are an NP and an AP, respectively. Would the node dominating the conjoined structure be NP or AP or some third category such as Pred(icate)P? If one assumes the structure in (3.25) and (3.26.b), this problem does not arise.

Munn, building upon work by Abney (1985, 1986), claims that B is a functional, as opposed to a lexical or thematic, element. Functors, which include D(ET), I(NFL), C(OMP), and

P,<14> have three characteristics: first, they form a closed class of items, are usually unstressed or cliticized, and may even be phonologically null. Second, they select only one type of complement, which may fail to be an argument (e.g. I selects VP). Third, they lack "descriptive content": their semantic contribution is secondary or supplementary to that of their complement (Abney, 1986; 4).

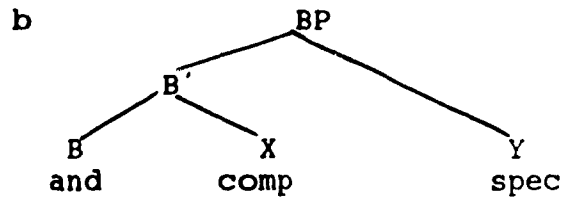
Munn points out (p. 137) that the B element possesses the first and third characteristics of functors. The second property, however, is more problematic, as B does not select a unique complement (as a strong interpretation of Abney's claim would indicate), but can select any given element as a complement (i.e. any XP). But Munn adduces as further evidence that Bs may nonetheless be functional elements the fact that they can, and indeed must, have subjects, which, according to Abney, only functional categories can do.

To summarize briefly the above remarks, it is assumed here that the feature marking [+phrasal] is associated with the category CONJ (or B). This element is itself the head of a conjoined structure and can take any element as its complement; thus, both phrases and clauses can occur in such a structure.

Furthermore, by assuming Munn's (1987) analysis of conjunctions, we can also account for why the marking [+phrasal] is most commonly associated with the marking [-preposable], as in the Class 4 connectives. A sentence such as the ill-formed one in (3.27.a) would have to have

the structure in (3.27.b).

3.27.a *And I read a linguistics text, Jane watched TV.



This structure clearly cannot coexist in English with the one posited in (3.25). If BP has the structure shown in (3.28.a), then it cannot also have the one shown in (3.28.b).

3.28.a BP --> SPEC B'

b BP --> B' SPEC

For each category in a language there can be only one order. Having motivated the one in (3.28.a), that in (3.28.b) is ruled out. Thus, if we assume that Class 4 connectives belong to the category described in (3.25) and (3.28.a), whether it be called B or CONJ, then we can account for their values for both the [phrasal] and [preposable] features.

It now remains to motivate the feature values for the other three classes of connectives. We shall begin with the conjunctions in Class 3, in which case the work of Emonds (1985) will prove illuminating.

To summarize the claim made by Emonds (1985; 247 et seq.), subordinating conjunctions are prepositions and subordinate clauses are one type of PP. (In fact, Emonds'

claim is far more general than I have stated here, in that he "undertake[s] to show that all subordinate clauses S are deep structure sisters to V or to P.... my claim is that the COMP morphemes are a subset of the P which appear in the frame __S and that S'=P'" (281). I will not go into all the ramifications of his theory here, but will simply discuss it as it pertains to the traditional adverbial subordinate structures headed by Class 3 conjunctions.)

It is certainly not controversial that certain prepositions have the same form as subordinate conjunctions:

- 3.29.a before dinner vs. before I had dinner
 b after the boring lecture vs. after I heard the talk
 c since Christmas vs. since we last met
 d until Helen's birthday vs. until the time comes

Because can take an NP complement if supplemented by of (cf. Fn. 9):

- 3.30 because *(of) his intransigence vs.
because he was so pigheaded

And certain conjunctions cannot take NP complements, e.g.

- 3.31.a *while the holidays vs. while he was at home
 b *unless a lawyer vs. unless they get a lawyer

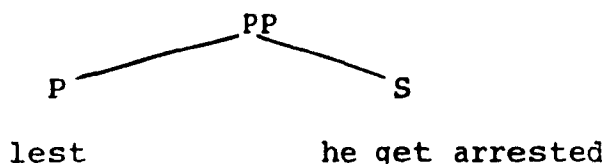
Finally, certain prepositions do not have conjunction counterparts:

- 3.32.a with my friends vs. *with I went to the movies
 b behind the Christmas tree vs.
 *behind we finished decorating the tree<15>

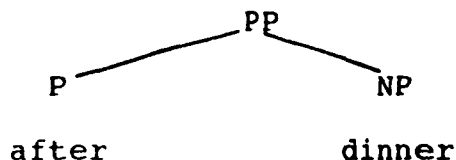
Emonds' claim is that it is not simply a case of

certain prepositions and certain subordinate conjunctions being homophones. Indeed, he states that "in general non-related non-productive syntactic categories do not have members in common" (254); in other words, members of different closed classes should not have the same form.<16> As we have seen, he claims that both types of items are members of the category P. He posits a structure as in (3.33.a) for an adverbial subordinate clause (p. 249), analogous to that in (3.33.b).

3.33.a



b



Emonds adduces the following justifications of the structure in (3.33.a) (249):

1. A subordinate conjunction of time or place (e.g. while, before, where<17>) may be intensified by right; this also true of "ordinary" Ps of time and place, but it is not true of any other category.

3.34.a I left the party right after dinner.

b Right after I left the party, the chimney caught fire.

2. An adverbial subordinate clause can be fronted<18> (i.e.

is [+preposable]) and under certain conditions can also serve as the focus of a cleft construction, as in (3.35); this behaviour is typical of PPs.

3.35 It was {after I left the party}
 {after dinner} that things got lively.

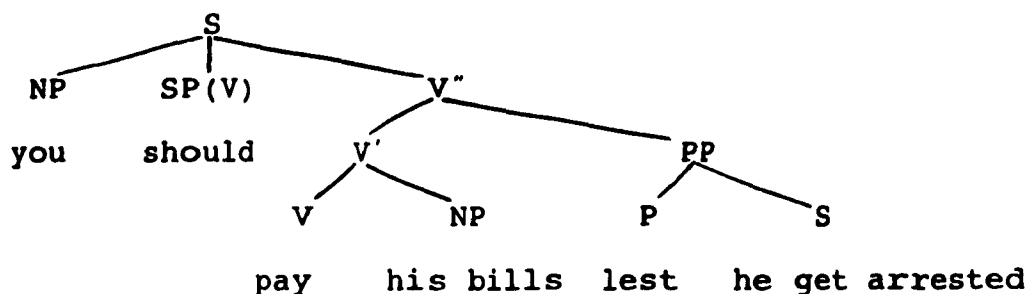
3. It is not uncommon for verbs to be able to appear in both __NP and __(that) S contexts. The data in (3.36), for example, do not lead one to conclude that there are two verbs believe:

3.36.a I believe Murray's statement.
 b I believe that Murray told the truth.

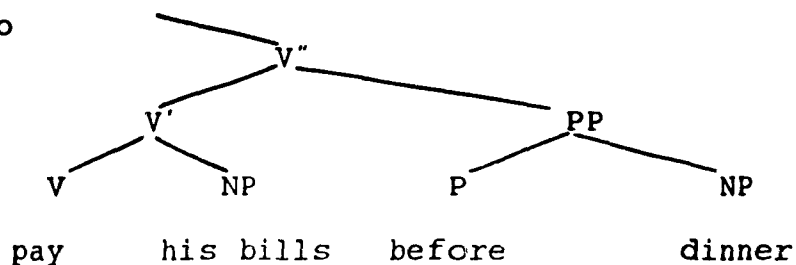
There is thus no a priori reason to assume, if (what Emonds deems to be) Ps are found in both those contexts, that more than one category must be involved. Instead, one can assume that, like Vs, Ps can occur in multiple contexts. Furthermore, just as certain Vs can take only S complements, and others can take only NP complements, one should not be surprised to find the same to be true of Ps (cf. examples (3.29)-(3.32)).

4. The subordinate structure most typically occurs in VP-final position, as in (3.37.a) (Emonds' (3), 249); this is also the typical position of a P-NP, as in (3.37.b).

3.37.a



b



Thus, according to Emonds, a P like before appears outside X', regardless of whether it has an NP or S complement.

It will be obvious that assuming, with Emonds, that Class 3 conjunctions are Ps lets us account without difficulty for the [+preposable] feature marking; as justification 2 above states, a PP may easily be fronted:

3.38.a I went out after dinner.

b After dinner I went out.

If an adverbial subordinate structure is also a PP, then its preposability (or reversability) is accounted for.

This is quite different from the situation with the Class 4 conjunctions discussed above. There we are assuming that the entire conjoined structure is a BP; changing the order of conjuncts entails violating its internal structure. With Class 3 conjunctions we are assuming that one conjunct is a PP; changing the order of the conjuncts involves

preposing the entire PP, rather than affecting its internal structure. This is an essential difference between the two classes.

What, though, of the [-phrasal] marking which Class 3 conjunctions have? It must be borne in mind that what is referred to here is the (apparent) conjunction of like elements, as in (3.39.a), rather than standard prepositional use, as in (3.39.b).

3.39.a *The traffic light turned green after red.

b The traffic light turned green after a while.

Note that it cannot simply be the case that (3.39.a) is ruled out because the conjuncts are adjectives, cf. (3.40):

3.40 *Julia was a professor after a student.

Thus, it is not simply that Ps may occur in __NP and __S but not, say, __AP contexts. It must be some other factor.

The essential problem here is to characterize the difference between Class 3 conjunctions and Class 1 [+preposable, +phrasal] conjunctions. One would assume that Class 1 conjunctions, being preposable, must be Ps, as we have seen that conjuncts with Bs cannot be preposed. (For reasons of economy, let us assume that there are only two categories of what are traditionally called conjunctions, unless and until it proves necessary to do otherwise.)

What I will propose here, though, is that-- despite appearances-- there is no discrete set of Class 1

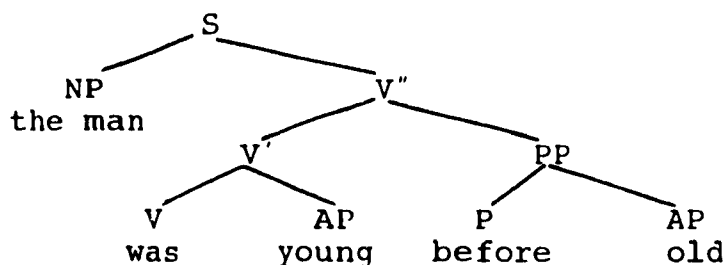
conjunctions; rather, the apparent Class 1 members are actually homophonous pairs of Bs and Ps. (Remember that there are only two members of this class, if and though.) The [+preposable] feature belongs to those instances which are Ps and the [+phrasal] feature to those that are Bs. This hypothesis seems to account most easily for all the available data; evidence supporting it will be presented below.

First let us consider the following two sentences, one containing before and one containing if. They contrast sharply in acceptability.

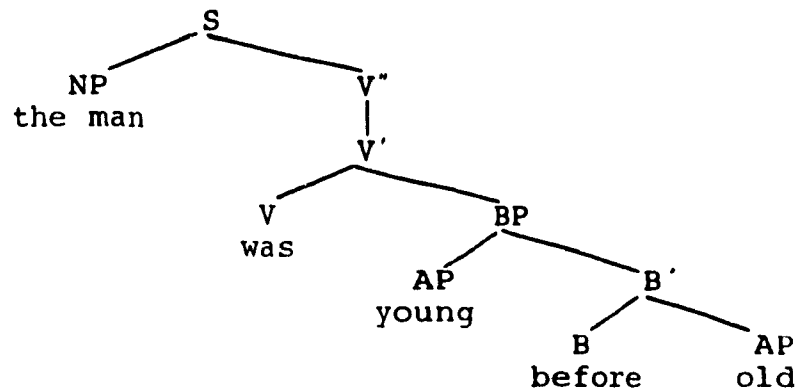
- 3.41.a *The man was young before old. (Class 3)
 b The wine was pleasant if youthful. (Class 1)

As we have seen, a preposition like before must occur outside V', according to Emonds. Sentence (3.41.a) must have the structure shown in (3.42.a) rather than that in (3.42.b) (the structure posited for a hypothetical B form of before).

3.42.a



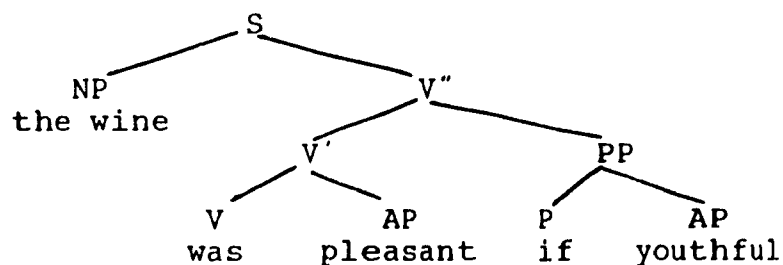
b *

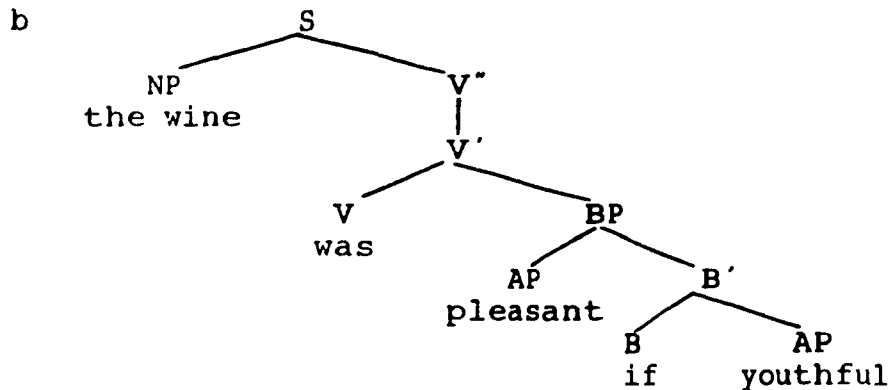


The structure in (3.42.a), which is the only one permissible for before, cannot be assigned a non-anomalous interpretation. It would have to mean that there was some time (before old, analogous to, e.g., before the war) when the man was young; this interpretation is semantically anomalous. The structure in (3.42.b), which would be meaningfully interpretable (i.e. would mean that the man was young before he was old), is ruled out because before is not a B, and cannot occur in such a structure.

Now, we are assuming that if is not only a P but also a member of the class of Bs, in other words that there are two ifs. Sentence (3.41.b) should thus have two permissible representations, shown in (3.43).

3.43.a





Given that there are two possible structures for sentence (3.41.b), one would expect there to be two possible interpretations of the sentence, and, in fact, there are. The structure in (3.43.a), with P if, has the interpretation that the wine is pleasant only when it is youthful; on the other hand, the structure in (3.43.b), with B if, means that the wine is pleasant despite being youthful. Unlike the structure with before in (3.42.a), the structure in (3.43.a) can, we find, be assigned an interpretation. Let us therefore assume that the conditional interpretation is associated with P if and the adversative interpretation with B if.

The same ambiguity should also be associated with clausal occurrences of if, and this is, in fact, the case. Consider sentence (3.44)<19>:

3.44 Pennyfeather is an excellent teacher if he is eccentric.

The unmarked interpretation of this sentence (for pragmatic reasons) is an adversative one: that Pennyfeather is an excellent teacher despite being eccentric. This is an

example of B if taking a clausal complement. But the conditional interpretation, although pragmatically strange, is still possible; this reading entails the presence of P if.

As only Ps are [+preposable], any instances of preposed if-conjuncts must be PPs, and therefore only the conditional interpretation should be possible. This is, in fact, the case:

- 3.45.a If youthful, this wine is pleasant.
b If he is eccentric, Pennyfeather is an excellent teacher.

In neither of the sentences in (3.45) is the adversative reading possible.

In the case of if, we have seen clear evidence that there seem to be two homophonous lexical items, a B and a P, possessing different semantic properties. The evidence in the case of (al)though is not quite as clearcut; there is no semantic difference between P and B though, but there seems to be some phonological evidence of a difference. Consider (3.46):

- 3.46.a The wine is pleasant though youthful.
b *The wine is pleasant although youthful.
c The wine is pleasant, {although} youthful.
 {though}

The B though can never have the form although, as the unacceptability of (3.46.b) shows. In order to permit the although form, one must force the interpretation of the conjunct as being a PP by means of a pause, as indicated in

(3.46.c). (The same effect can be observed in the examples with if, where a conditional reading is facilitated by a pause.) Thus, we see that the preposition can be realized as either though or although (the latter form being more common in the speech of adults, according to my data), but the B can only be realized as though.<20>

These cases would, then, seem to be further counterexamples to Emonds' argument that items in closed classes do not overlap in natural languages, although one might still argue that the dual status of if and though would not violate this principle, given that there are differences-- in one case semantic, in the other phonological-- between the B and the P in each case.

As to why there should be homophonous Bs and Ps in the first place, one hypothesis might be that the Bs in these cases are the result of a process of reanalysis. In the case of most Ps, only an instance with a clausal complement would resemble on the surface a conjoined structure with a B (see (3.37.a)). This would not be enough of a stimulus for reanalysis, apparently. But if and though could occur in structures like (3.43.a), which on the surface resemble phrasal B-conjunctions. Presumably, if in certain structures was reanalyzed as a B, having a structure as in (3.43.b) and taking a full range of complements, sentential ones as in (3.44) and a variety of phrasal ones:

3.47 AP: pleasant {if } youthful
 {though}

NP: a good teacher {if } an eccentric
 {though}

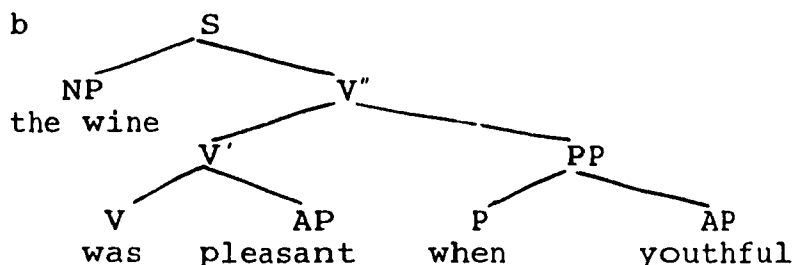
AdvP: quickly {if } carefully
 {though}

PP: in the Blue Nile {if } not in the White Nile
 {though}

(For some reason, VP complements appear to be ruled out.
The not in the PP example is obligatory because of the
adversative semantics of the conjunction (see Section 3.2).)

Let us compare this with another conjunction, when,
which can appear in structures like that in (3.43.a).

3.48.a The wine was pleasant when youthful.



But there is no indication that there has been any
reanalysis of structures like (3.48) containing when.
Sentence (3.48) is not ambiguous, prepositional of the PP is
always permitted and does not reduce the number of available
interpretations (3.49), and there is no evidence (in my
dialect, at least) of other types of apparently conjoined
phrasal structures (3.50).

3.49 When youthful, this wine is pleasant.

- 3.50 *a good teacher when an eccentric
 *quickly when carefully
 *in the Blue Nile when (not) in the White Nile

Note that the PP in (3.48) also appears in contexts which are manifestly not conjoined structures:

- 3.51 This wine pleases when youthful.

Conditional if can appear in this context, but adversative if cannot; sentence (3.52) can have only the conditional interpretation.

- 3.52 This wine pleases if youthful.

There are, then, as we have seen, a number of pieces of evidence going to show that if and though are each two different items, one P and one B.<21>

The final type of conjunction to be characterized is Class 2 [-preposable, -phrasal]. We will assume, given their [-preposable] value, that these conjunctions are Bs. Why, then, are they not [+phrasal] like other Bs (i.e. those in Class 4)? Let us make the assumption that, unlike other Bs, they are marked as taking only one type of complement, namely an S.

This solution may appear somewhat ad hoc, when one considers that the unmarked case in English is for Bs to be able to take any given complement; the Class 4 conjunctions are by far the most frequent in English and count among their number the prototypical conjunction, and. This, however, does not appear to be the case cross-linguistically

(cf. Payne, 1985; Schachter, 1985). It is not at all uncommon, for example, for the coordinating conjunctions in a language to be used only for NP coordination; other strategies (e.g. serial verb constructions) may be used as the equivalent of conjunction for other categories (Schachter, 1985; 46-49). Payne (1985; 5-6) remarks that conjunctive strategies may vary not only according to the clausal versus phrasal distinction, but also according to phrasal category; in Fijian, for instance, one and-type conjunction is used to conjoin Ss, VPs, APs, and PPs, while another can only conjoin NPs. Thus, positing a class of conjunctions which require a specific type of complement seems fairly uncontroversial, given the cross-linguistic data. One must also bear in mind that members of other categories, e.g. Vs, as well as Ps according to the theory assumed here, also vary with respect to the types of complements they may have.

In summarizing this section, let us return to the questions posed initially: how many categories do the items known as conjunctions<22> actually belong to, and do they actually have more in common than a traditional name?

To take these points in order, I claim, first, that the so-called coordinate and subordinate conjunctions in English do in fact belong to two separate syntactic categories. What one might deem to be the coordinate conjunctions (Classes 2 and 4 and some instances of 1) have a category of their own known as B (following Munn, 1987) or as CONJ.

Within this category items are distinguished according to whether they select only an S as complement (Class 2) or whether they may take any XP as complement (Class 4); the latter type is far more frequent in English. In conjunction by means of a B, the entire conjoined structure comprises one BP (Munn, 1987); hence, these structures are characterized by the impossibility of reversing the conjuncts.

What are known as subordinating conjunctions, on the other hand, are prepositions which are able to take S complements (following Emonds, 1985); these include members of Class 3 and some instances of Class 1. The preposability characteristic of these conjunctions stems from the fact that only the final conjunct of a conjoined structure is a PP; this may be preposed, reversing the order of the conjuncts.

We end up, then, with three classes of conjunctions, after all, as shown in (3.53).

3.53 Classes of Conjunctions

1. B __XP
and, but, if, or, then, though, yet
2. B __S
except, for, only, so
3. P __S
after, (al)though, as, because, before, if, lest,
once, since, unless, until, when, whereas, while

The putative Class 1-- [+preposable, +phrasal]-- is found to fall out from the existence of homophonous Bs and Ps, with

each class contributing one feature-marking.<23>

As to the question of whether the two types of conjunctions actually have anything in common, the answer initially appears to be no. They belong to two different categories, as we have seen; there is no single category of conjunctions. In fact, the subordinate conjunctions, if this hypothesis is correct, do not belong to a category of their own, but are actually prepositions. And the syntax of coordinate and subordinate structures is quite different; in the former, both (or all) conjuncts are contained within the XP headed by the conjunction, whereas in the latter, only the final conjunct is.

Nevertheless, if one assumes, with Abney (1985), that P is a functional category, then the two classes of conjunctions would have at least this much in common: that each is a functional rather than a lexical (or thematic) category.<24> Remember also that Bs differ from other functors in that they do not have a single designated complement element; they can take any XP. The same is also true of Ps, which can take a wide range of complements (Emonds, 1985; 32-33, 247 et seq.). Thus, it seems that, assuming Bs and Ps to be functional elements (given that they have the other characteristics of functors), they share this characteristic which sets them apart from the other functors (C, I, and D). Thus, there do actually seem to be certain intriguing parallels in the status of the two main types of conjunctions, even though they are not found to

belong to one syntactic category.

3.2 Semantic and Pragmatic Aspects

3.2.1 Introduction

In this section the semantic and pragmatic aspects of conjunction will be discussed. The contribution that individual conjunctions and classes of conjunctions make to the interpretation of the sentences they head will be examined, as well as the extent to which discourse context must be taken into consideration in interpretation.

In (3.54) the clausal conjunctions that are found in the adults' and children's discourse studied here are listed, divided into their major semantic classes according to Halliday & Hasan's (1976) schema.

3.54 Semantic Classes of Conjunctions in Adults' Discourse

Additive: and, (either) or

Adversative: but, except, <lest>, <only>, though, unless,
whereas, yet

Temporal: after, and, as, before, once, since, then,
until, when, while

Causal: because, <for>, if, since, so

3.55 Semantic Classes of Conjunctions in Children's Discourse

Additive: and, or

Adversative: but, except, though

Temporal: after, and, as, before, then, till, when, while

Causal: because, if, so

(Certain authors, e.g. Romaine (1985), add another major class, Conditional, to the list, thus separating if from more typical causal conjunctions.) More different temporal conjunctions are used (by both adults and children) than any other semantic class; temporals also make up the most frequent class, as Tables 3.1 and 3.2 show. Among adults, the adversative class also has a fairly large number of members, which is interesting, considering that this is the least frequently used class. Causals and additives have few different class members but are relatively frequent in discourse.<25> (For a more detailed examination of class frequency, see Chapter IV.)

The list in (3.54) also shows that adversatives are the only semantic group of conjunctions with members in each syntactic class. There does not, in general, appear to be any principled relationship between syntactic and semantic classes. It is true that additive conjunctions are found only in the class of standard Bs (those that can take any XP as complement), but one must bear in mind that there are only two additive conjunctions in the sample, and and or. Thus, while one might hypothesize that the simple additive relation is incompatible with subordinate status (hence

there are no additive Ps), it would be difficult to claim that the evidence is very strong. Causal conjunctions may be either Ps or S-complement Bs, and temporals may be Ps or XP-complement Bs. If one considers both types of Bs together, we find that adversatives, temporals, and causals may be either Bs or Ps; only additives, as we have seen, are limited to one syntactic category.

Let us now briefly consider the members of each semantic class of conjunctions insofar as they are instantiated in the corpus, and discuss some of the questions raised in the literature.

3.2.2 Additives

Not all the connectives known as additives have, strictly speaking, the function of simply indicating the addition of information to the discourse. Or, for example, belongs to the subgroup that Halliday & Hasan (1976) call Alternative connectives<26>; it is also called a disjunctive marker. The additive conjunctions used in the corpus under study are and and or.

And, in fact, can have any semantic function; it can belong to any of the major classes. Van Peer (1984; 20) comments that "because conjunctions (and perhaps connexity devices generally) possess a low degree of semanticity, their potential (pragmatic) use displays a rather wide range." Among conjunctions, and has a particularly low degree of semanticity and can be used to express virtually

any link between virtually any elements. Van Peer notes, though, that adversative occurrences of and are relatively rare; he considers that this connective generally focusses on the continuity of one topic with its predecessor, rather than on divergence or contrast (see also Carlson, 1985).

The most basic additive use of and is exemplified in example (3.56).

3.56 And so the dragon is putting on the little, uh, candystick, and the princess is, putting, oh, she's hanging a STAR, and the prince is hanging, uuh, whatever, little ANGEL. (EK; ad)<27>

In this descriptive sentence, each clause introduced by and (ignoring for the moment the initial clause) is intended simply to add information to the preceding ones, to build up the picture; also, all of the events described are presented as occurring at the same time (a matter we will return to later).

In a sentence like (3.56), the linking of the conjuncts in question produces a structure that is not only semantically but also pragmatically appropriate. The interpretation of the sentence is not only logically sound, but it also fits in with our knowledge of the (fictional) world; it is not hard to find some continuity of topic in the events depicted therein. There has been considerable discussion in the literature about the status of such sentences as (3.57) (originally from Gleitman, 1965).

3.57 My grandmother wrote me a letter and six men can fit in the back seat of a Ford.

Lakoff (1971; 116) rates this sentence as "marginal at best," opposing Gleitman's judgment of it as acceptable. It is clear that Lakoff's judgment of the sentence is based on pragmatic factors; it is difficult to think of any possible link between the conjuncts that would justify their being conjoined. But, as Carlson (1985), for one, points out, when a unifying context is provided, the acceptability of such a sentence becomes unquestionable. Thus, (3.57) might be acceptable as the answer to a question like (3.58), given, say, a situation in which people are polling friends and relatives on the seating capacities of various car models.

3.58 What have you heard on the subject? or
What has your family told you?

In such a context, the speaker of (3.57) would be perceived as giving the source of his information, as well as the information itself.

As several researchers have pointed out (e.g. van Dijk, 1979; Stubbs, 1983; van Peer, 1984; see also Lakoff, 1971), conjunctions can be used to mark links not only between syntactic elements or semantic propositions, but also between speech acts. Thus, in many cases they are encoding not logical but pragmatic relationships. For example, van Dijk (1979; 450) contrasts the two examples in (3.59).

3.59.a Yesterday we went to the movies and afterwards we went to the pub for a beer.

b Why didn't Peter show up? And, where were you that night? (punctuation van Dijk's)

In the first sentence, and is used semantically (in van Dijk's terms) to express a relationship between two facts. In (3.59.b), on the other hand, "and is used to indicate that the speaker wants to mark that he adds something to the first speech act." (450) The link expressed by the pragmatic use of and can be much less specific than that seen in (3.59.b); consider the following example:

3.60 (Interviewer explains story-telling task to AH and says that his story can be of any length.)

I: Whatever you feel like.

AH: (PA) And all of my friends are going to hear this?

(AH; ad)

There is nothing specific in the preceding discourse that the speaker could be connecting his remark to by using and; in fact, given the immediate context of the sentence in (3.60) it appears to be a complete non-sequitur. But the remark is interpretable. The speaker is actually linking his utterance to the entire discourse context; that is, in addition to the troubles he is presently faced with (viz. telling a story), he also faces the possibility of future humiliation, in the form of other people's hearing his story. Many, if not all, conjunctions can be used pragmatically as well as semantically; linkages that cannot be understood without knowledge of the discourse context and/or knowledge of the world are extremely frequent, and

many are found in the corpus. (They will not, however, be examined in greater detail here.)

A related problem that has been the subject of much research (e.g. Bellert, 1966; Lakoff, 1971; Schmerling, 1975; van Dijk, 1977; Gazdar, 1980; Posner, 1980) is the distinction between the symmetric and asymmetric uses of and. When and is used symmetrically, as in (3.61) (and (3.56)), a change in the order of conjuncts does not affect the usual interpretation of the conjoined structure. With the asymmetric (or temporal) use of and, on the other hand, the usual interpretation of the conjoined structure is affected when the order of the conjuncts is changed, as in (3.62).

3.61.a Their decorations were all torn down from the tree, and the presents were scattered around.
(AR; ad)

b The presents were scattered around and their decorations were all torn down from the tree.

3.62.a The branch breaks and he falls down. (SM; ad)

b He falls down and the branch breaks.

Sentence (3.62.a) would generally be given the interpretation that the branch broke first and afterwards (and as a result) the man fell down; (3.62.b) has the opposite interpretation. Thus, and with the asymmetric interpretation is more or less equivalent to and then or then, occasionally even to so.

There is, as various authors (e.g. Gazdar, 1980;

Posner, 1980) have shown, no reason to assume that we are dealing with two separate but homophonous connectives here. As Stubbs (1983; 79) points out, the normal asymmetric interpretation of a structure can be cancelled without any contradiction resulting, as in (3.63).

3.63 I got drunk and crashed the car, but not in that order.

Rather, as Gazdar (1980) shows, the asymmetric use of and must stem from the basic meaning of and coupled with Grice's (1975) Maxim of Orderliness. In other words, unless given evidence to the contrary (such as an expression like but not in that order), the hearer assumes that the order in which events are encoded in speech is the order in which they actually happened. Where, however, the conjuncts describe states rather than events, as in (3.61), and even more clearly in (3.64), then there is no inherent assumption of temporal ordering, and the symmetric interpretation of and will be more usual.

3.64 And I've been having a lot of difficulty sleeping in my new place. The refrigerator makes an AWFUL lot of noise, and the person who lives upstairs from me starts playing piano very early in the morning.
(LD; ad)

Thus, in general one can say of and that it serves as a highly unspecified type of link, taking much of its colour from the context in which it occurs.

Or, like and, generally indicates continuity of the conjoined item with the preceding topic, but it adds the

further element of offering an alternative (or disjunction) to the previous item. There are two basic uses of or: exclusive disjunction, as in (3.65.a) and inclusive disjunction, as in (3.65.b).

- 3.65.a The things don't move. I mean, they're THERE or they get taken off the board. (LD; ad)
- b D'you want [the story] to be funny or does it have to have a beginning and an ending or? (SD; ad)

In a structure like example (3.65a), it is utterly impossible for both conjuncts to hold at once; either the game pieces are on the board or they are not on the board. But in example (3.65.b), the alternate situations described do not preclude each other. The speaker proposes various characteristics that a story might have; if it is funny, that does not mean it cannot have a beginning and an ending, and vice versa. Rather, the hearer may select any or all possibilities.

As in the case of symmetric versus asymmetric and, it seems probable that there are not two ors but one conjunction with more than one use. Or itself expresses the presentation of an alternative and the semantic and pragmatic characteristics of the conjuncts-- being either compatible or incompatible with each other-- account for the inclusive or exclusive reading. Van Dijk (1977; 43) claims that, in general, "intensional disjunction in natural discourse is exclusive"; certainly, it is far more frequent in my corpus of data than inclusive disjunction.

Note that the presence of either increases the probability of the exclusive reading:

3.66 Either they don't hear it properly, or they deliberately change it. (JM; ad)

It would not be completely impossible for someone both to mishear a message and to deliberately change what he did hear. Nevertheless, (3.66) would generally be taken to imply that one or the other situation obtains, but not both. (Either is extremely rare with clausal or, although it is used relatively frequently with phrasal or; (3.66), in fact, represents the only instance of clausal either in my corpus.) The addition of else to an or-conjunct also weights it in favour of an exclusive disjunctive reading.

3.2.3 Adversatives

The adversative conjunctions are used to express some kind of contrast or contradiction between conjuncts.

The most frequently used adversative conjunction is but; this connective also has the widest range of possible uses. Carlson (1985; 162-163) discusses three primary uses of but, exemplified in the sentences below.

- 3.67.a The red [snooker] ball stays in, and it's out of play.
But the coloured ball comes back out. (SR; ad)
- b And all her friends run through the forests shouting "Aoooh! Aoooh!" to try and find her, but they can't.
(BS; ad)
- c [His birthday]'s on Monday actually, but, uh, he's having it on Sunday. (EK; ad)

Example (3.67.a) illustrates what Lakoff (1971) calls the "semantic opposition" but; here but is used to indicate that two items behave differently with respect to some property (in this case, red and (other) coloured snooker balls differ according to whether they stay in the pocket or not). In (3.67.b), but is used to compare two conjuncts with regard to some general situation. Thus, in this sentence the measures taken by the friends to find the girl are weighed against their final lack of success; both conjuncts bear on the larger situation of whether or not she was found. Carlson calls this the "tertium comparationis" but. Finally, (3.67.c) illustrates the "contrary-to-expectation" but; but here serves to indicate that, even though the evidence offered in the first conjunct leads one to expect that the situation depicted in the second conjunct should not obtain, nevertheless it does obtain. Thus, one expects someone to celebrate their birthday on the day on which it falls, rather than some other day; in (3.67.c), but serves to indicate that this is not the case.

In some cases it is not clear exactly which function but is fulfilling, as more than one interpretation is possible; some cases seem to have two functions simultaneously. Consider (3.68):

3.68 Their dragon was a very friendly dragon but sometimes he could be naughty. (CQ; ad)

In (3.68) but seems primarily to have the tertium comparationis function, in that the general topic seems to

be the character of the dragon. But there are also elements of contrary-to-expectation but, in that one might expect friendly creatures not to be naughty. (Carlson calls the contrary-to-expectation use "perhaps the most commonly recognized but" (162); clear cases of this use, though, are not very common in my corpus, whereas both the other primary functions are.) It is quite likely that there is really a continuum of adversative roles, with clear cases of contrary-to-expectation, tertium comparationis and the other functions occurring at certain points in this continuum, and other fuzzier cases occurring in between; as with and and or, it is probably the nature of the conjoined elements and of the context that determines the function of but in a given structure. Consider, for example, the change that would be effected in the interpretation of example (3.67.b) if it were not the girl's friends who were trying to find her but, say, a Search and Rescue team: the adversative structure would immediately get more of a contrary-to-expectation flavour, since it is expected that Search and Rescue will be able to find a missing person, whereas there is no such expectation in the case of laypersons.

Most of the other adversative conjunctions fulfill one or more of the functions also accomplished by but. In examples (3.69)-(3.72), but could be substituted for any of the other adversatives, although it sounds rather unnatural in the concessive although-clause in (3.69.c).

3.69.a Although [the woman]'s happy that HE'S getting better, the mother bird is unhappy because... this man sacrifices the life of the three birds. (RR; ad)

b And even though it rained, they had a wonderful time after all. (SR; ad)

c And you play it with one other person, although you CAN play with teams. (LD; ad)

3.70 So [the puck] used to always hit the metal bar in the back,... which meant I didn't lift it off the ice. Whereas these guys were just shooting, and bopping them in. (SR; ad)

3.71. And this woman wants to divide up all the furniture, so that they, they know WHOSE furniture belongs to who. And they DO this, except there are problems. (DL; ad)

3.72.a He is very rich yet he always travels by bus.

b Ambulance comes, takes the guy. But yet the birds are dead and the guy is in the hospital. (TV; ad)

There are no examples of adversative if or of only or lest in the corpus; they have been discussed in the previous sections. If, as we have seen, has a strong contrary-to-expectation interpretation. Lest, which is infrequently used in modern speech, is usually more or less equivalent to a negative so-clause, i.e. so (that)...not. (See example (3.37.a) from Emonds (1985).)

Unless, like lest, is a different type of adversative conjunction; it has some characteristics of conditional causals as well as of adversatives. It expresses a type of contradiction, but thereby has some similarity to a negative

if-clause (3.73.b).

3.73.a But it probably wouldn't work very well with three people unless one of them was hard of hearing.
(JM; ad)

b But it probably wouldn't work very well with three people if one of them wasn't hard of hearing.

Thus, unless seems to be a sort of conditional adversative connective.

3.2.4 Temporals

Temporal conjunctions indicate the relationships in real time of the situations described in the conjoined elements. These conjunctions fall into two basic groups: simultaneous and non-simultaneous. The non-simultaneous connectives, relating events that do not occur at the same time, are the most frequent.

The most commonly used temporal conjunction, other than asymmetric and-- which has been discussed in Section 3.2.2-- is the (non-simultaneous) sequential temporal then. Sequential temporals like then and and serve simply to mark the fact that events in discourse are being encoded the same order in which they occurred in real time.

3.74 He found the ball, and then he tripped over this life-preserver. (SM; ad)

This sequential use of then is, so to speak, an explicit encoding of Grice's Maxim of Orderliness. The then that is used in conditional constructions, though, seems, if

anything, to express temporal simultaneity, cf. (3.75).

- 3.75 So if you're aiming for... the black ball, and the, the cueball goes in WITH the black one, then you don't get any points, and in fact you lose points.
(SR; ad)

The remaining non-simultaneous conjunctions can be divided into preceding and succeeding markers. The preceding connectives (after, (some uses of) when, since, and once) indicate that the clause headed by the conjunction describes an event occurring before that described in the other conjunct; the succeeding conjunctions (before, until, and of course then) head clauses describing events that follow the event described in the other conjunct.

Of the preceding conjunctions, after simply indicates relative position in time without necessarily indicating that two events are chronologically adjacent.

- 3.76.a After they'd finished decorating the tree, they brought all of their presents out and arranged the presents underneath the Christmas tree. (AH; ad)
- b And the winner's the one who has the most points after everyone's thrown out all their letters.
(SM; ad)

As the two sentences above show, after-clauses (being PPs) can occur either before or after their main clauses. The second position, i.e. that in (3.76.b), is the syntactically unmarked one; nevertheless, the reversed structure is much more common in my data (occurring twice as frequently as the other). Clearly, the reason for this is a tendency to map discourse order onto chronological order; this is so strong

as to overrule any preference there might be for unmarked syntactic structures.<28>

When, once, and since generally imply that the events or situations depicted are adjacent to each other in time, which is not necessarily the case with after.

- 3.77.a When the tree was done, they put all the presents, which were brightly wrapped, under the Christmas tree. (CQ; ad)
- b I dunno WHY he's like that, but ever since... I married him, he never wanted to have children. (RR; ad)
- c Once they've chosen who's gonna be It, that person goes off into a designated corner somewhere and shuts their eyes and counts to a hundred. (CG; ad)

With these conjunctions also, chronological order takes precedence over the normal syntactic order; these temporal clauses generally precede their conjuncts, as in all the examples above.

Among the succeeding conjunctions, before corresponds approximately to after and until (or till) to once, with regard to temporal adjacency; that is, before does not imply adjacency (although it does not, of course, rule it out), but until does.

3.78.a And they stayed there until the rain stopped.
(TP; ad)

b And till you get to the end, you, you try to get
your rock into each square that's numbered. (AR; ad)

c So it would be like, you have to sit here just for
one exam before you can go home. (IZ; ad)

d But when I got home, or even before I got home, I
had decided to try to raise money to send to this
poor old lady. (JD; ad)

With succeeding temporal conjunctions, where chronological order corresponds to the unmarked syntactic order, one would expect the subordinate clause to occur finally. This is overwhelmingly the case; the marked order occurs only once for each conjunction, and it should be noted that in one case, (3.78.d), it is required by the context, in that it serves to correct the preceding when-clause.

When occasionally serves as a preceding temporal, as we have seen, but more usually it functions as a simultaneous connective. The interpretation is usually constrained by the nature of the conjuncts, rather than reflecting any ambiguity in the conjunction itself. A when-clause can depict either an event or a state, as shown in (3.79).

3.79.a And he's showing off NEXT to the pool with the ball,
when he TRIPS over the life-preserver. (LD; ad)

b Later, when he was in the hospital, uh, his friend
the woman came to visit him. (AH; ad)

Since when simply indicates that two situations obtain simultaneously, it can be used to mark either a background situation (or "ground"), as in (3.79.b), or a foregrounded

event (or "figure"), as in (3.79.a). Background or setting when-clauses occur frequently in both the unmarked and the preposed position, but event when-clauses occur primarily in second position, after the setting has been established. Note that preposing a "figure" conjunct results in a sentence that is, at least, questionable:

- 3.80 ?When he trips over the life-preserver, he's showing off next to the pool.

Thus, an initial simultaneous when-clause tends to call for a setting interpretation; when such a reading is impossible, the result is an anomalous structure (in the absence of a motivating context). But a when-clause that, because of its stative nature, would tend to have a setting interpretation anyway, can occur in either position:

- 3.81 His friend the woman came to visit him when he was in the hospital.

As and while, unlike when, can only indicate a continuous activity or a state, generally with a background interpretation (see the (a) sentences below), although they can be used to indicate one of two simultaneous activities, neither of which is backgrounded, as in the (b) sentences.

- 3.82.a And the, uh, idea of the game is to pick up as many of the jacks at one time as you can, while the ball is still in the air. (IZ; ad)
- b The number of people in the middle constantly increased while the people running... constantly decreased. (JD; ad)

3.83.a And in his enthusiasm as he was shaking a present, he accidentally knocked the Christmas tree over with his tail. (AH; ad)

b And they were telling me that we had to BAIL the water, as it came OUT, uh, from the... toilet. (JG; ad)

In this corpus, as-clauses were found to occur with equal frequency in initial and final position, whereas while-clauses very rarely occurred in initial (i.e. marked) position. For both conjunctions, though, only a setting clause can be preposed; when the structure denotes simultaneous activities, the conjoined clause will occur finally. The pragmatically based tendency is to downplay the setting (as given information), placing it first even though this results in a syntactically more marked structure.

3.2.5 Causals

Causal conjunctions encode the fact the situation depicted in one conjunct is a result of that depicted in the other. The two most frequently used are so and because, which differ in their "directionality", so to speak; that is, a clause headed by so denotes an effect whereas a clause headed by because denotes a cause.

3.84 cause [so effect]
effect [because cause]

Other causals, e.g. for, as, since, pattern with because; so is alone in designating an effect.

So is the most commonly used causal connective in the speech of adults. In fact, in many ways it is the causal equivalent of then: it is a B, occurs very frequently, and serves to indicate that events are being encoded in their "natural" order (i.e. chronological order for then, cause-effect order for so). It can be used to express causal links of various strengths.

3.85.a She ran out of money so they threw her out. (JD; ad)

b I quite enjoyed that, and everybody signed my cast, and it, it was the first time anybody in my family had had a CAST, and so it was really quite a big, exciting scene. (MD; ad)

In (3.85.a) an obvious causal link exists between the events described; running out of money leads directly to the woman's being thrown out. But in (3.85.b), although the so-conjunct does describe a result of the preceding conjuncts, it seems also to serve to sum up the entire course of events. In many conjoined structures with so, the element of causality seems to be highly diluted.

One further semantic use of so is the intentional one, in which it is usually accompanied by that:

3.86 And [the It] has to use the ball, and throw it and try to hit another person so that that other person gets tagged and is It. (SD; ad)

In these cases, so indicates that the conjunct it heads is not only the result of the action described in the preceding conjunct but was brought about deliberately by means of that action.

Because is the most common of the reversed causals, i.e. those in which the conjunction marks cause rather than effect.

3.87.a I think it's a very SAD story because... their relationship had so much pressure on it because they... wanted to stay in this cheap apartment. (DL; ad)

b And because she knew what it was like to be alone and not have anybody, she decided to take the dog in and have... HIM as a friend. (RR; ad)

As because-conjuncts are PPs, they can occur in preposed position, as in (3.87.b); indeed, one might expect that a preference for cause/effect ordering (like that for chronological ordering) would favour this structure. But this is not the case; the vast majority of because-clauses occur in final position.

Since also serves to head a cause clause, which can occur either initially or finally (since is rare in the corpus and occurs about equally frequently in both positions).

3.88 And of course the dragon has to go get all the, the wood and CARRY it, since prince and princesses don't do too much heavy work. (JG; ad)

Note that since-clauses may be vague between temporal and causal readings:

3.89 Things keep going wrong since you left.

The causal interpretation of since probably derives from the temporal one (presumably on the basis of post hoc ergo

propter hoc reasoning). Causal as (not represented in this corpus) is substitutable for since and probably also derived from the temporal reading (although the reasoning behind the development of a simultaneous temporal to a causal is less clear).

Finally, if belongs to a third subtype of causals; it is used to mark the condition portion of a conditional structure, which might be seen as a contingent causal.

3.90.a It's easier to play if you're only two people.
(CQ; ad)

b If they KNEW that I got cut on the glass, my mother would say, "What were you doing in the LANE where there was glass?" (TV; ad)

In the majority of cases, the conditional clause is preposed, presumably because of the same tendency to orderliness we have observed elsewhere. But in a structure like (3.91.a), reversing the clause order is not possible (but see (3.91.c)).

3.91.a You can only get to the home space if you get EXACTLY the right number. (DL; ad)

b *If you get exactly the right number, you can only get to the home space.

c Only if you get exactly the right number, can you get to the home space.

In these cases, it is presupposed that there is a desired result, and the condition is viewed as a means to that result. But clause reversal forces a normal conditional interpretation on the structure, and thus makes it

unacceptable, unless only precedes if.

3.3 Textual Aspects

Conjunction is a device that operates as much outside the sentence as inside it; clausal conjunction serves to link sentences together. Whether the two sentences are combined into a single sentence (intonationally speaking), as in (3.92.a), or whether they remain separate sentences, as in (3.92.b), textual cohesion is achieved.

- 3.92.a Harry kissed Jane and then Bill kissed Sally.
b Harry kissed Jane. And then Bill kissed Sally.

As far as the total discourse is concerned, it matters little whether (3.92) is intonationally one sentence or two; what is important is that a particular type of link has been established between two clauses. (See also examples (1.13) and (3.85.b) for links having scope over a whole section of discourse.)

As Halliday & Hasan (1976) show, conjunction is one of the major devices used for establishing textual cohesion, for binding the elements of a text into one structural whole (as was discussed in Chapter I). As we have seen (Fn. 26), conjunctions are not the only items that can serve to encode what might be termed "connective relations", but they do serve the purpose particularly well.

This is demonstrated by Meyer (1975; 56-57) with the following set of conjoined structures.

- 3.93.a The stranger could not understand. He was a Frenchman.
b The stranger, being a Frenchman, could not understand.
c The stranger could not understand because he was a Frenchman.
d The stranger could not understand. This was because he was a Frenchman.

The causal relationship obtaining between the two clauses is expressed increasingly explicitly from the (a) to (d) sentences above. In (3.93.c) we see how using the conjunction because allows this relationship to be encoded not only explicitly but also economically. The causal link between the clauses in the (a) structure is only implicit; in fact, it is primarily a function of Grice's (1975) Maxim of Relation (or relevance). The hearer assumes that the information that the stranger was a Frenchman has some relevance to the previous statement that he could not understand, and concludes that it may in fact explain it. But given that this link is implied rather than stated, it may be contradicted without an anomalous structure resulting; in the context of (3.93.a), it is always possible that the stranger's Frenchness may turn out to have nothing to do with his not understanding. This is not the case with the (c) and (d) structures; in them, causality is explicitly encoded. And this explicit encoding is done very economically by means of a single-word conjunction: compare (c) and (d). Each possible intersentential relation is stereotypically marked by a particular connective, according to Meyer.<29>

Warner (1985) argues that, because of the intersentential nature of clausal conjunction, it must be viewed as a discourse or textual process, rather than a purely sentential one. It is a process that cannot be adequately accounted for within a sentence grammar, in that the nature of conjunction is conditioned at least as much by the requirements of discourse as by those of syntax. This is similar to Gopnik's (1979; 165) expressed view that "any rule which can operate across sentence boundaries is a rule of the text grammar. Any rule which must operate within sentence boundaries is a rule of the sentence grammar" (see Section 1.3).

Other authors have, instead of examining the role of connectives in a general text theory, examined the role they play within specific text types, e.g. van Peer (1984), Rudolph (1984), Cieri (1985). Rudolph, for example, investigates the use of conjunctions (and particles) within spoken and written argumentative texts in English and German. She examines the various conjunctions that typically occur in each of the three stages of an argumentative text: Thesis, Arguments, and Conclusion. Not surprisingly, different types of conjunctions tend to cluster at these different stages: the conclusion, for example, is characterized by the frequent use of effect-marking causal connectives, e.g. so, then, thus, so that. The conjunctions serve to organize and connect the different sections of the text.

Rudolph notes that, for argumentative texts at least, conjunctions are found more frequently in oral than written texts. In written texts, other organizational strategies appear to take precedence (possibly ones requiring greater planning than is usually possible with oral texts), and the role of conjunctions in establishing connexity is less important.

Cieri (1985), like van Peer (1984), studies the role of the single conjunction and in narrative texts. Cieri, however, concentrates on spoken narratives, whereas van Peer studies written (in fact, literary) ones. Like van Peer (see Section 3.2), Cieri finds that and is used predominantly to mark continuity between one clause (particularly narrative clauses) and another. As an offshoot of this function, it is used to indicate continuity in cases where this might not otherwise be apparent, e.g. when a change in verb tense occurs. (This compares interestingly with Gopnik's (1986) findings for children's stories; see Section 2.3 for discussion.) Thus, given and's normal function of simply "lexicalizing" continuity, as it were, it can also be used to impose continuity on a structure. Thus, it helps make the text not only cohesive but coherent.

Conjunctions play an important role in establishing textual cohesion. De Beaugrande & Dressler (1981; 74) claim that "except for disjunction, the use of junctives as explicit signals is rarely obligatory, because text users

can recover relations such as additivity, incongruity, causality, etc. by applying world-knowledge." But by letting the hearer "apply world-knowledge" in interpreting a text, the text-producer runs the risk that the hearer may apply such knowledge in a different way from what he had intended (see discussion of example (3.93)). This de Beaugrande & Dressler concede when they say that "by using junctives, text producers can exert control over how relations are recovered and set up by receivers" (74). And precisely this, I believe, is one of the intentions that text producers do have. After all, it can be only rarely that a speaker wishes to be ambiguous, let alone to be misunderstood.

It may be relevant to note here that de Beaugrande & Dressler analyze almost exclusively written texts. Rudolph (1984), as we saw, shows that, for at least one text type, oral texts contain more conjunctions than written ones. (See also Beaman (1984), discussed in Section 4.3.5 of this work.) As this study will show, conjunctions, although frequently not necessary as far as comprehension is concerned-- insofar as application of Grice's maxims should in many cases render lexical conjunctions superfluous-- nonetheless do seem to be obligatory in the production of well-formed oral texts. They make explicit certain relations that text-producers feel to be important. Without their presence, text types like stories and explanations are anomalous, however coherent they might be and however many

other kinds of cohesive ties they might have.

3.4 Acquisition of Conjunctions

3.4.1 Order of Acquisition

The acquisition of conjunctive relations begins at an age considerably earlier than that of the children in the present study. As will be seen in Chapter V, the youngest children in this study, the three year olds, already demonstrate mastery of several different conjunctions.

Clancy, Jacobsen & Silva (1976) report on a study of children's initial acquisition of various conjunctive relations, with and without lexical connectives, in four languages (English, German, Italian and Turkish). The children in the various studies from which they obtain their data range from age two to about 4;6 years. The first occurrences of connected discourse are found at approximately age two (varying slightly according to language). Initially, structures are conjoined without lexical conjunctions. The first surface manifestation of conjunction is the use of a single intonation contour over both conjuncts of a structure, found at about 2;3 in English; as well, the child may use an overt connective, but not link the conjuncts by means of intonation. Later--generally by age three-- the child will learn to combine intonation and the use of connectives for purposes of

conjunction. Full mastery of the syntax of conjoined structures may not develop until later still-- even after five years-- depending on the complexity of the particular devices used in his language.

Of the major semantic classes of conjunction, Clancy et al. find the additive relation (and its stereotypical conjunction, and) to be acquired first cross-linguistically, followed closely by the marking of sequence (then), antithesis (but), and causality (so, because). (Although here I have indicated the conjunctions typically associated with each relation (in English), Clancy et al. found that the first occurrences of these relations, at approximately age two, were not associated with lexical conjunctions (see above); the conjunctions come later, at around 2;6.) Conditional structures generally emerge at around three years old; when this occurs, though, they are usually not marked in English by if but by when. (The use of if emerges rather later.) Used purely temporally, when generally marks successive actions, rather than simultaneous ones (cf. the adult usage, Section 3.2). Simultaneity, with when and while (and their equivalents), emerges later than sequentiality in all the languages studied. The last temporal conjunctions to emerge in all languages studied are after and before, which are typically first acquired between 3;5 and four years.

Bloom, Lahey, Hood, Lifter & Fiess (1980) concentrate upon children's acquisition and use of actual lexical

connectives in English.<30> Their sample comprises four children, studied longitudinally from age two to slightly older than three. Their results corroborate those of Clancy et.al. in some features, but differ in others. Like the other group, Bloom et al. find and to be the first conjunction to be used productively by children<31>, emerging at 25 to 27 months; up to four months intervene between the acquisition of and and that of any other connective, in their corpus. Likewise, they find the additive relation to be the first to emerge. Unlike Clancy et al., who find causality to be the last major semantic relation acquired in English, they find evidence that adversativity is the last to be acquired. (Bloom et al. note in this context that the earlier study was not concerned only with structures containing lexical connectives (as we have seen); a certain amount of interpretive effort on the part of the researcher is thus required. Also, Clancy et al. indicated the first appearance of a particular conjunctive relation, rather than the time at which it was in productive use.)

Bloom et al. find evidence for the developmental sequence additive < temporal < causal < adversative. They point out that this sequence falls out from the increasing complexity of the relations concerned: temporal conjunction is additive but with an additional element. Causality has both additive and temporal components, and certain adversatives contain elements of all three other relations,

in addition to the element of contrast (258).

The conjunctions most frequently used by Bloom et al.'s children were and, because, when, and so. And then, but, and if were found less frequently. None of the more complicated temporals-- while, before, after-- become productive during the time period which Bloom et al. examine. This corresponds with Clancy et al.'s finding that these temporals tend to be acquired after age three, even as late as four.

The findings of the two studies discussed above are in general borne out by our own data. In the speech of the three year olds, the only conjunctions occurring with any frequency are and, because, then and but, and being, of course, the most frequent (as it is for speakers of all ages; see Tables 5.1 (children) and 4.1 (adults), Appendix D). The one occurrence of when is sequential, rather than simultaneous, conforming to Clancy et al.'s findings. (It is also used in a context where an adult speaker would not use it.)

3.94 I: Why did the prince and princess RUSH into the room?

AnJ: When they heard a noise.
(AnJ; 2;9)

Clancy et al.'s finding contrasts interestingly with the results obtained in the present study for adults, who use when most often with a simultaneous function. But it appears from their work that simultaneity in general emerges late compared to sequentiality.

There is one instance of after in the three year olds' corpus; not surprisingly, it is found in the speech of an older three:

- 3.95 PM: My brother goes to [kindergarten] but NOW he's going to Grade 1.
I: Is he? You remember the day you went? Last week?
PM: Eee, after they were having the magic [=gymnastics].
(PM; 3;6)

Note that it is not entirely clear from the context whether after is actually being used as a conjunction, or whether it is really being used as a temporal adverb, a synonym for afterwards.<32>

The more frequently used conjunctions are generally used correctly, by adult standards, even though the syntax of the conjoined elements (as also of non-conjoined sentences) fairly often fails to correspond to adult grammar. One minor but interesting point is the extreme rarity of so in the threes' discourse, as compared to that of the other children, and especially that of the adults.

By age four, the children in our sample have acquired a considerable number of different conjunctions.<33> So and when are now used relatively frequently. By this age, the simultaneous use of when has already started to prevail over the sequential use.

3.96.a I CAN'T TALK when I'm eating. (ME; 3;11)

b See. You never move your leg, when it has a broken leg. (EB; 4;0)

c And when my daddy came in in the morning, he knocked over the light. (RB; 4;6)

In most cases, the when-conjunct encodes a continuous activity or state and has a setting interpretation (3.96.a & b), but there are instances of when being used to mark simultaneous event structures, as in (3.96.c).

The conditional marker if is used relatively often by fours.<34>

3.97 The teacher crawls. She tries to get all the children. And if she TOUCHES one, the children have to be a baby. (RB; 4;6)

And a number of sophisticated temporal conjunctions occur sporadically in the four year olds' discourse,<35> e.g. till (never until), after, as, before, while.

3.98.a We STAND till the people comes in. (RN; 3;8)

b Then Bingo arrived, and they all started off. Before... they crossed Old Troll Bridge. (RN; 3;8)

c After he came, he was very, very friendly. (KK; 4;7)

Note that in the case of these subordinate temporal structures, the trend towards encoding events in chronological order is strong. This is so even when it involves using a syntactically marked structure, as in (3.98.c). Clark (1973) has found that temporal constructions with a preposed subordinate clause are

acquired after coordinate constructions and unmarked subordinate constructions. The need to encode not only temporal ordering (which can easily be done with then), but also contingency, as Clark terms it (i.e. the dependence of one event on a preceding one), leads to the acquisition of sophisticated structures like (3.98.c).

As the children's answers to questions show (see Section 5.2), even five year olds have some trouble grasping certain causal relationships. Thus, as Clancy et al. point out, occasional instances of anomalously used causals (pragmatically speaking) are found even after children have mastered the relevant syntactic structure. Consider the following example, from the speech of a verbally sophisticated four year old:

3.99 I was THREE and then I turned four because I had a party. (RB; 4;6)

As (3.99) indicates, RB appears to believe that a birthday is the result of a party, rather than vice versa. Thus, the child's misunderstanding of real-world causal relations in a particular instance results in the production of an anomalous structure, despite her good grasp of the semantics of because.<36>

The new conjunctions manifested in the speech of the five year olds in this sample are the adversatives except and though.

3.100.a He plays hockey, except it's a... toy hockey.
(AJ; 5;0)

b I can only read Bedtime for Frances. Though I can't do ALL of it, 'cause sometimes... I wouldn't know what would happen. (NK; 5;0)

(The shifts in frequency of the more common conjunctions with age will be discussed in detail in Chapter V.)

One conjunctive relation that appears to be extremely difficult for young children is disjunction (or). Neither Clancy et al. nor Bloom et al. mention the development of alternative conjunction; it appears to take place at a later age than their studies encompass. (Certainly it does not become productive for any of the four children in Bloom et al.'s study.) There are only two instances of clausal or in our corpus, one each at four and five.

3.101.a I: She's gone to Florida?
CB: Or maybe she's still sick.
(CB; 4;3)

b And we have to sit down before the, the people gets them, or else... it's, people, the It, and then it's the other people who have to get them. (NK; 5;0)

Or, then, is very rare in the speech of children of this age. Yet it is quite frequent in the speech of adults (see Table 4.1); it is not one of the most frequent conjunctions, but it is by no means marginal. Clearly, the disjunctive relation is one that must undergo considerable development between age five and the adult grammar.<37>

With regard to comprehension, this is certainly the case. Beilin & Lust (1975a,b,c) have shown that

comprehension of disjunctive structures first starts appearing at age three, at which time it is still minimal. Children continue to have a certain amount of difficulty comprehending more complex disjunctive structures at least until age ten (the age of the oldest children in Beilin & Lust's study). They also found that four and five year olds prefer the inclusive reading of a disjunctive structure to the exclusive, which they consider to be the more appropriate reading, generally speaking (see also van Dijk, 1977). (This tendency is not manifested in the production of the children in our sample; both examples of or seem to have an exclusive interpretation.) Given the difficulty that young children have with the concept of disjunction, then, it is not surprising that they use it very little in their speech.

Beilin & Lust's work deals only with those natural language connectives corresponding to the connectives of formal logic (and, or, and not).^{<38>} Several researchers concentrate upon children's mastery of and, e.g. Tager-Flusberg, de Villiers & Hakuta (1982), Peterson & McCabe (1987). Such works tend to focus on children's production and comprehension of clausal and phrasal coordinate structures in various forms, i.e. their mastery of the various processes affecting the structure of conjuncts. For instance, both the works mentioned above examine the difference in difficulty between forward and backward conjoined forms. Forward coordination involves

multiple predicates or multiple elements within a predicate (e.g. conjoined objects), as in (3.102); backward coordination involves multiple subjects, as in (3.103). (Examples are from Peterson & McCabe (1987; 469).)

3.102.a Forward Phrasal

We went over to Grandma's and had soup.

b Forward Clausal

We went over to Grandma's and we had soup.

3.103.a Backward Phrasal

Lisa and Ginger came to my party.

b Backward Clausal

Lisa came to my party and Ginger came to my party.

(Note that backward clausal structures can sound quite awkward, as is the case with (3.103.b); nevertheless, Peterson & McCabe found them fairly often in their natural language data.)

Tager-Flusberg et al. find that phrasal coordination emerges before clausal (as do Bloom et al., 1980). They also find that children do better with conjoined items at the end of a sentence rather than at the beginning (which they ascribe to left-to-right language-processing: placing extra elements at the end of a sentence requires the least planning, both in production and comprehension). Thus, forward conjunction is found to be the easiest for children.

Whereas Tager-Flusberg et al. deal primarily with comprehension, imitation and description tasks, Peterson & McCabe examine data from children's stories (from children

aged 3;6 to 9;6). They find that sentential coordination is more common than phrasal in these stories, and this difference increases with age. Forward coordination (which Tager-Flusberg et al. discovered to be easier) is also more common in the data for all age groups.

The proper use of connectives is developed over a considerable period of time. Scott (1984) examines the development of adverbial connective devices in conversation between ages 6 and 12. One device she studies is the so-called conjunct (following the Quirkian usage, as in Quirk & Greenbaum, 1973); these include then and so, which I am considering to be conjunctions.<39> She finds that the six year olds use the various connective devices under study relatively rarely and that they do not have a large vocabulary of them. Gradually, both the frequency and the variety of these items increases, but even at 12 the child's rate of connective use does not equal that of an adult.

One interesting point is that the frequency of the conjunction so doubles between 6 and 12; as it becomes more frequent, it is more often weakened from a strong causal conjunction to what Scott calls a continuative. This use is very frequent in adults' speech, as we have seen (Section 3.2 above). She also notes that or continues to be comparatively rare in the speech of children of the relevant ages, as do other connective devices with a disjunctive function. In general, she finds, children of this age prefer to effect sentence connection by means of

coordinating conjunctions and temporal adjuncts rather than with such items as for instance, after all, probably, perhaps, etc. (what Scott calls conjuncts and disjuncts).

Wald (1986) investigates the development of various subordinating elements at and after adolescence in the vernacular speech of Spanish-English bilinguals. Certain conjunctions such as temporal as and unless remain rare even in adult speech. (As is moderately infrequent in my adult corpus (obtained from Standard English speakers), unless very rare.) Others such as since and (al)though show a definite increase between preadolescence and adulthood. Wald argues that one factor influencing older speakers' adoption of new conjunctions is the increasing of stylistic options. Because-clauses are not preposed in the speech of this community (they are rarely preposed by the adults in my study either); causal since-clauses can be preposed. Similarly, but-conjuncts cannot be preposed but though-conjuncts can. Thus, adding the new conjunctions to his repertoire gives a speaker the ability to prepose certain types of clauses when stylistic considerations make this desirable, rather than being constrained by the syntactic behaviour of the conjunctions he had acquired earlier.

3.4.2 Conjunctions in Child Discourse

A number of researchers on text production by children, and in particular on their production of stories, have

devoted some portion of their work to the way children use conjunction as a cohesive device, e.g. Gopnik (1986), Hedberg (1984), Romaine (1985). Much of this research has already been discussed in Section 2.3. In addition, some of the work discussed in Section 3.4.1 in connection with the general acquisition of conjunction and conjunctions was based on data from one particular text type: for example, Scott (1984) relies on data from conversations, whereas Peterson & McCabe (1987) get their data on the use of and from narratives (although they do not focus on the specifically textual aspects of its use). In this section, we will discuss some papers that concentrate on the way children use conjunction as a textual device.

Cassell (1984) studies the use of textual markers (conjunctions and adverbs) in children's stories. The children (aged 5, 8, and 10) were required to tell a story from a picture book; the task is thus similar to one of the story tasks described in this study. Cassell finds that the younger children use the individual pictures in the book (or frames, as she calls them-- there are several pictures per page) as an organizing framework for their stories. Many of their utterances are frame-length, i.e. narrate the action of one frame. The percentage of frame-length utterances decreases with increased age.

The conjunction then is typically used to introduce a new frame, especially by the younger children. The older children typically use a greater variety of temporal

markers. But Cassell found that, even in a more sophisticated text, a cluster of thens may be found, marking a group of pictures the storyteller does not fully understand; the child resorts to simply describing each picture, effecting links by means of then. The older children, though, not only use then less frequently but are less likely to use it as a frame-initiator or, as Cassell puts it, a "left picture-frame boundary" (121). To sum up, then, Cassell finds the frequent use of then to be an indication of limited narrative sophistication, whether used generally, as a result of youth, or locally, as a result of lack of comprehension of a particular story theme.

There is some evidence supporting Cassell's hypothesis in our data, in that the use of and then often coincides with the "left picture-frame boundary" in these children's stories too. But it should be borne in mind that, for many children, a new picture was the signal to begin a new clause (as Cassell also found): in other words, the children tend to produce one sentence for each scene in their picture book. The turn of the page signals the end of the clause. In the case of a child who begins most narrative clauses with a conjunction or cluster of conjunctions, these conjunctions will also correspond to the picture boundary. Thus, it is not at all clear that the format of the picture books in our study is directly affecting conjunction usage, as opposed to simply affecting clause boundaries and thus having an indirect effect on conjunction use. Those

children who produce more than one clause per picture do not appear to show any less a tendency to use conjunctions in the subsequent clauses, i.e. those not associated with the picture boundary. It is also not clear that, among children as young as the ones in our study (three to five years), heavy conjunction use can be considered a marker of a lack of sophistication. (For more detailed discussion of these results, see Chapters IV and V.)

Romaine (1985), in a detailed analysis of one story by a 10 year old, found that 46% of the total clauses in that narrative were headed by lexical conjunctions; the remaining 54% were connected implicitly to the preceding discourse. This finding comes midway between the 51% of total clauses headed by an overt conjunction in the stories of children (three to five) and the 43% in the stories of adults in this study, suggesting that there is a steady fall in the proportion of overtly conjoined clauses with age. This is probably related to the increasing frequency with age of clauses that are nonconjoinable; see Section 4.2 for a more detailed discussion of this. By far the most frequently used conjunction in Romaine's data is and, which bears out both commonsense expectations and my own findings for both adults and children; interestingly, though, then does not occur at all in her data.

Jisa (1987) examines the use of various sentence connectors in French children's monologues (generally narratives). Again, not all the connectives she studies are

conjunctions. Six children, aged three to almost five, were the subjects of this study. The most frequent connectives used include the conjunctions et 'and', pis 'then', alors 'so', and mais 'but', which is similar to the data from English-speaking children. These high-frequency connectors are extremely frequent in the discourse of the younger children. They occur less often in the monologues of the older children, as these children have acquired a greater variety of other connectives and use them appropriately. Similarly, the younger children use a higher proportion of purely sequential or additive conjunctions, whereas the older children more frequently encode more complex relations.

Jisa also points out some other aspects of connective use over which the older children have greater mastery. For instance, on occasion the simple use of a connective is not enough. All the children in her study used et ben 'well' as a start marker, to begin a narrative; but the older children would also use an introductory phrase such as une fois 'one time, once' and an abstract of the story, whereas the youngest children might rely on the connective alone in this context. Likewise, in some contexts a connective is inappropriate, e.g. when stepping outside the story and making a comment; in this context, one wishes to disconnect, not to connect. The elder children already appeared to realize this, while the younger ones frequently introduced such comments with et or et pis. Thus, during the age range

studied by Jisa, the children show some evidence of learning how to use connectives to organize narrative discourse: which types of conjunctions are appropriate (or inappropriate) at what point in the text.

These studies confirm what has already been indicated in Section 3.4.1: the acquisition of conjunctions and the complete mastery of their use as a device for producing textual cohesion is a process that continues until adolescence and beyond. Although children five years old have already acquired a considerable stock of different conjunctions, they are by no means capable of using them completely appropriately by adult standards. At this age, they are still relying heavily on a core stock of high-frequency conjunctions. The use of other types of intersentential connectives is rare. Nevertheless, one must not forget that by this age they are capable of encoding quite complex temporal, causal, and adversative relationships, and of using conjunctions as a means of organizing and structuring their discourse. They have already attained a considerable degree of sophistication.

As we have seen, there has been a considerable amount of research done on children's use of conjunctions, both phrasally and clausally. The role of conjunctions in children's discourse has been examined from various perspectives. The research to be presented here will also focus on conjunctions in children's texts, approaching the subject from yet another perspective.

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Rather than concentrating on the specific functions of individual conjunctions-- as Cassell (1984) and Peterson & McCabe (1987), for example, do-- this study will concentrate on the more global usage of conjunctions as a class within various text types. The aim will be to determine if and to what extent the use of these words can be deemed to be a function of text type. Do the presence and type of lexical conjunctions vary with the type of text being produced? In that sense, this study is somewhat akin to that of Rudolph (1984), which was also concerned with conjunctions as a reflection of text type, but had a more narrow focus, as well as being concerned only with adults. This thesis, then, should throw some light not only on children's use of conjunctions, but also on their conception of text type as a notion having linguistic consequences.

Notes to Chapter III

1. In certain conditional structures in German, the subordinate clause is verb-initial; this occurs when the conditional conjunction wenn is omitted, as in (ii.a). (The verbs (or in this case auxiliaries) are capitalized here.)

i.a Wenn ich das gewusst HATTE, WARE ich nie gekommen.
b If I had known that, I would never have come.

ii.a HATTE ich das gewusst, WARE ich nie gekommen.
b Had I known that, I would never have come.

Note that the verb-initial subordinate structure is precisely equivalent to the rather archaic sounding English structure in (ii.b). Quirk & Greenbaum (1973; 315) point out that Subject-AUX inversion is one of the characteristics of subordinate structures in English, although it is uncommon in informal speech nowadays. (The Subject-AUX inversion in the matrix clauses of the German examples above is a result of the subordinate clause's occurring sentence-initially; the verb-second rule still prevails when the initial element in the sentence is a clause.)

2. Dunbar (1985) points out that there are constraints affecting the choice of a construction with weil or with denn, and that these are a function of discourse context. If the conjoined clause contains presupposed information, it cannot contain denn and the verb-second structure; compare (i) and (ii) (Dunbar's (5) and (6),

p. 22; all glosses are Dunbar's).

i. A: Was ist geschehen?
'What happened?'

B: Er ist weggelaufen, denn er hatte Angst.
'He ran away because he was afraid.'

Er ist weggelaufen, weil er Angst hatte.
'He ran away because he afraid was.'

ii. A: Warum ist er weggelaufen?
'Why ran he away?'

B: Er hatte Angst.
'He was afraid.'

C: *Nein - er ist nicht weggelaufen, denn er hatte Angst. Er ist weggelaufen, denn...
'No - he didn't run away because he was afraid. He ran away because...'

Nein - er ist nicht weggelaufen, weil er Angst hatte. Er ist weggelaufen, weil...
'No - he didn't run away because he afraid was. He ran away because...'

(Note that the use of for in English is also prohibited in the context in which denn in German is prohibited.) Dunbar discusses other cases where, although, syntactically speaking, a choice is possible between a verb-second or a verb-final structure, the discourse context will force the choice of one or the other.

3. Quirk & Greenbaum's use of the term 'conjunct' for this type of connective is odd. Generally, 'conjunct' is used to denote the element conjoined (which Quirk & Greenbaum call a 'conjoin'), rather than the connective. (The term 'conjunction' is, of course, ambiguous, as it can denote both the process of conjoining and the lexical item used to mark the link.)

4. I have not referred here to the question of which connectives can co-occur in a clause (cf. Quirk & Greenbaum's diagnostic for conjuncts). It is not a matter which I will be examining in any detail here. It is a problematic area, as a number of asymmetries immediately make themselves obvious. For example, compare the interaction of the Class 2 (see list in (3.16)) conjunction so with the two Class 4 conjunctions and and then: and so vs. *so and, *then so vs. so then. Certain combinations are presumably ruled out on semantic or pragmatic grounds, e.g. *but so. One also encounters combinations of conjunctions which are clearly only string-adjacent, e.g. and because, as in (i) (cf. example (ii)):

- i. And because he was already so upset, I didn't tell him about his cat running away.
- ii. And I didn't tell him about his cat running away, because he was already so upset.

This type of combination seems clearly to be quite different from the and so type, in which the conjunctions are underlyingly adjacent and thus are not separable in this way.

- iii. And so nobody mentioned the cat at all; he got home and it was gone.
- iv. *And he got home and it was gone, so nobody mentioned the cat at all.

(As with certain other examples cited here, (iv) is clearly not ungrammatical in itself, but it is unacceptable if regarded as a paraphrase of (iii).)

5. In preliminary versions of this work, including Laubitz (1987), the [preposable] feature was referred to as [reversible], to indicate that preposing results in a reversal of the unmarked clause order. I have subsequently changed this terminology in order to avoid confusion with the phenomenon of semantic/pragmatic reversibility (or symmetry; see Section 3.2.2).
6. It must be remembered that only the clausal occurrences of these conjunctions are counted here. Nonetheless, it can be observed that phrasal occurrences of Class 1 connectives are exceedingly rare, even rarer than clausal ones. (One would expect to find such usage only in a more formal context than the one in which these data were collected.)
7. I am indebted to L. Travis for formulating this notion.
8. Not all the works cited are couched within the same theoretical framework; the work of Gazdar (1981), for instance, as well as those that build on it (e.g. Sag, 1982; Sag et al., 1985), uses the Generalized Phrase Structure Grammar (GPSG) framework.
9. The structures that we are concerned with are conjoined full finite sentences having the form NP VP CONJ NP VP. I will not be discussing the structure of non-finite subordinates, like (i).
 - i. James fled the country after destroying all his files.

At one point it seemed likely to me that the possibility of occurring in a non-finite clause (i.e.

with an adverbial gerund, as in (i)) might be one more diagnostic of subordinate conjunctions. It proves not to be a fully accurate diagnostic, though. Not all the conjunctions finally diagnosed as subordinate can be used non-finitely: after, before, since, until, when, while can be, whereas although, as, if, once, unless, whereas cannot, cf. (ii). Because may be used non-finitely if followed by of, as in (iii).

ii. While/*as eating dinner, I listened to the radio.

iii. Because *(of) reading the encyclopedia, Hubert became a pedantic bore.

This in-class variability is to be expected if, as I will argue, following Emonds (1985), subordinate conjunctions are prepositions. Note that judgments in some cases-- although, if, unless, and until, for my idiolect-- are difficult to make. For a comprehensive survey of adverbial subordinate clauses, see Thompson & Longacre (1985).

10. In natural language data, structures like that in (3.19.c) are actually found. Sentences (as diagnosed by intonational and pausal cues) that end in a conjunction are, in fact, fairly frequent in my corpus. I argue that these structures fall into two types: place-holders and conjunct elisions.

Place-holders are used when a speaker finishes a sentence and has not planned what to say next, but is nevertheless unwilling to relinquish his turn yet. The

interpolation of a conjunction of minimal semantic content (usually and) does not commit him to giving his next utterance any particular form, but still serves to indicate to the hearer that there is more to come and that he must not start speaking yet.

- i. And I went out and it was REALLY RAINING again, and.
And like, the, the rain was jumping up to my KNEES.
(JG; ad)

The relevant and in (i) is accompanied by sentence-final intonation and pause; the and at the beginning of the following sentence is clearly a separate item. This type of sentence-final conjunction is evidently very similar to the planning phenomena discussed in Chapter IV.

The other type of sentence-final conjunction serves as a marker of what I consider to be the elision of an entire conjunct when its content is entirely (or, rather, essentially) recoverable from the context, as in (ii):

- ii. Is that that type of story, or?
(CQ; ad)

In this type of case, the speaker realizes that the hearer can reconstruct the missing conjunct from the context; in (ii), it would have been something like isn't it? For reasons of economy, therefore, he simply omits it. (Conjunct elision is especially frequent with or; it also occurs fairly often with so. For semantic and pragmatic reasons, both these conjunctions frequently head conjuncts whose content can reliably be

filled in by the hearer.)

Neither of these cases, I believe, affects the argument that Ross bases on example (3.19.c); in one case, it might be argued, one is dealing with an unplanned final conjunct and in the other with a deleted one. I would argue that the conjunction in both cases is associated with the missing final conjunct, rather than with the present initial one. In fact, it is probably this circumstance that accounts for such structures giving an effect of incompleteness or unfinishedness.

11. Ross is careful to point out that sentence (3.20.c) is not actually ungrammatical; it is simply not a possible paraphrase of sentence (3.20.a). It is acceptable when the sentence as a whole is intended to contrast with some previous utterance, i.e. in those contexts where (i) is also acceptable:

- i. Aber sie will tanzen; ich will nach Hause gehen.
'But she wants to dance; I want to go home.'

Note that the same is true of the examples illustrating [-preposable] connectives in English; the (b) sentences in (3.9) and (3.14) are impossible paraphrases of the corresponding (a) sentences, but would be acceptable where the sentence-initial connective was intended to effect a link with the preceding discourse.

12. Gazdar (working within the GPSG framework) proposes that the names of coordinating morphemes can appear as features on categories, hence the [and] feature on the

NP dominating the second conjunct.

13. As M. Gopnik (p.c.) has pointed out, this name is not entirely appropriate, since the category B does not comprise all and only the Boolean operators; the if/then and negative operators, for example, appear not to be included, and it is possible (and I am assuming here) that some items are included which are not Boolean operators. (Munn does not provide a list of Bs.) Nevertheless, for the sake of consistency I shall continue to use the names B and BP when referring to work done within the framework set out by Munn.
14. There is some contention about whether P is or is not a functional category; Fukui & Speas (1986) claim that it is not. If one assumes that it is, however, then one can posit certain parallels between coordinate and subordinate structures, as we will see.
15. It is, of course, not surprising that (synchronically) purely locative prepositions would not be able to head clauses. Nevertheless, certain temporal Ps like before and after are derived diachronically from locatives.
16. This argument does not hold with complete strictness; as L. Travis (p.c.) has pointed out, it would be difficult to argue that Comp that and determiner that are the same item. Thus, how much weight it can be given is uncertain.
17. There is some doubt as to whether where is an adverbial subordinating conjunction or an indirect question

marker. I have considered it to belong in the latter category. For Emonds, of course, the distinction is irrelevant anyway since he considers all subordinators to be Ps.

18. Emonds claims that such fronting is accompanied by comma intonation. I believe that this condition is not necessary; there need not be a pause after the fronted element.
19. There are dialect differences affecting the acceptability of (3.44) with the required interpretation. For some speakers, (3.44) can only have the adversative reading if even is added to the if-conjunct, although they do accept an adversative reading of (3.41.b). In my dialect, the adversative reading of if-clauses without even is perfectly acceptable, but it is rare.

Note that the addition of even forces an adversative reading even in cases which are clearly PPs, e.g. have been preposed:

- i. Even if he is eccentric, he's a good teacher.

I would claim that in such cases the adversative reading is imposed by even, which is an adversative marker. Consider its role in the following examples:

- ii. Even after Jane ate dinner, she was still hungry.
- iii. Even when the refugees were living in Canada, they were constantly anxious.

Even gives any clause an adversative meaning, and thus results in P if having the same function as B if.

20. With even, only the though form is permissible:
- i.a Even though I took the loan, I was not in a conflict of interest.
- b *Even although I took the loan,...
21. It is possible that, in the future, conjunctions like when will also be reanalyzed as Bs on the basis of examples like (3.48), if my hypothesis is correct. When contrasts with other prepositions like before and after, which, as we have seen, cannot occur in this type of structure at all, cf. (i).
- i. *This wine was pleasant after youthful.
22. For the sake of simplicity, I shall continue to use the term 'conjunction' to refer not only to what have been designated here as Bs but also to those Ps which take clausal complements; in other words, I shall continue to use the traditional terminology in contexts where it is not inappropriate.
23. L. Travis (p.c.) hypothesizes that the properties of Class 1 conjunctions might be a result of their licensing abilities, and that there might in fact be four classes of conjunctions, based on licensing properties. This is a possibility that has not been gone into here.
24. Abney (1985; 11) concedes the possibility that there may be two classes of prepositions: functional and thematic. He does not indicate which Ps would fall into which class. As I have indicated above, this is a developing field still fraught with debate and

uncertainty.

25. Although and can have any of the four principle semantic functions, I have, for reasons of simplicity, divided the instances of and in the sample studied here into only two types: symmetric and asymmetric. Instances of symmetric and are classed with the additive conjunctions, whereas asymmetric and is classed with the temporals.
26. Halliday & Hasan use this system to classify not only what are traditionally called conjunctions but also various discourse particles, sentence adverbials and so on, including not only single words but also phrases, e.g. in this respect, on the contrary, I mean. Although all of these items do perform a discourse connective function, we are concerned here only with the traditional conjunctions.
27. Examples with a bracketed identification after them are from the corpus of collected discourse (see Chapter IV). For an explanation of the punctuation conventions, abbreviations, etc., used here, see Appendix C. The examples in Section 3.2 are all from the adults' sample, as they are intended to give some idea of the standard uses of the various conjunctions. I have cleaned up some of these examples, removing dysfluencies, pauses, and markers of suprasegmental features as well as attention markers by the interviewer (e.g. mhm, yeah), and substituting lexical

NPs for some instances of pronouns, but the majority of the examples are in their original form.

28. This tendency was noted by Clark (1973); she calls it the "Order of Mention" principle, i.e. the principle that order of mention should correspond to chronological order. This is one of three factors affecting adults' choice of conjunctions, the others being derivational (i.e. syntactic) simplicity and choice of theme. The general necessity of placing the theme of a sentence first may overrule the other factors, resulting in the choice of a preposed subordinate and/or a mismatch with chronological order.
29. Meyer's classification of the intersentential relations differs slightly from that of Halliday & Hasan, comprising the following classes: 1) causal, 2) temporal and spatial, 3) contrastive (i.e. like adversative), and 4) descriptive (i.e. like additive) (47). There are clear similarities between the two systems.

I find Halliday & Hasan's four basic semantic classes very useful as a classification system, as have many other writers in this field. Others (e.g. Warner, 1985; Thompson & Longacre, 1985) prefer a basic system that incorporates more distinctions.

30. Bloom et al. study not only conjoined structures but also relative clauses, indirect interrogatives, and assorted complements: in other words, complex

sentences in general. I abstract from their work what is directly relevant for this study.

31. Bloom et al. only mark when a particular conjunction becomes productive in a child's grammar, rather than when it first appears. This contrasts with the study of Clancy et al.
32. The use of after as a synonym for afterwards continues to be frequent in the speech of adults, even though this is a "solecism" much targeted by prescriptivists. (Adults, however, provide one with enough information to determine whether a particular instance of after is a conjunction or an adverb.)
33. Certain conjunctions occur only once or twice in the corpus; thus, given the data available, one is not able to judge whether they are productive in the speech of even one child, by Bloom et al.'s standards. I will make the assumption that such occurrences do represent the competence of at least the producer of a given example, if not of the age group as a whole, given that they do not occur in contexts where they could have been learned by rote, but are used spontaneously and correctly. (There is certainly no doubt that some children, and not necessarily the older ones, have a more sophisticated mastery of conjunctions than do others of their age group.) Note that some conjunctions occur equally rarely in the speech of the adults, without causing one to doubt their

- productivity. It is clear that certain conjunctions are used with extremely high frequency by all age groups, and others (generally the more highly specific temporal and adversative markers) are rare at all ages.
34. Interestingly, there is not a single occurrence of if in the fives' corpus. This is probably a coincidence, given its relative frequency in the speech of the four year olds.
35. Note that two of the examples cited are from the speech of one child, RN. RN was a verbally very sophisticated subject (despite being one of the younger fours), and, in fact, all of the "exotic" temporals except the instance of after in (3.98.c) come from his interview. It is possible that the four year olds as a group do not have mastery of some or all of these conjunctions; it is also possible that they simply do not choose to use them, placing their reliance on the tried and true and, then, because, so, and but (as do some of the adults). As I have been illustrating the children's use of the more difficult (later acquired) conjunctions, I have not (explicitly) provided examples of the more frequent ones (although some are to be observed in the examples provided).
36. It is always possible that this represents an instance of pragmatic because, rather than an anomaly, i.e. that the speaker uses because to indicate how she knows that it was her birthday. This is probably not the case,

though. (It is, after all, well known that young children in our culture believe that a birthday without a party is no birthday at all!)

37. This may or may not be related to the circumstance noted by de Beaugrande & Dressler (1981), viz. that only in disjunctive structures will omission of the conjunction result in a structure that cannot be correctly interpreted; Grice's maxims will be of no help here. Thus, disjunction represents a kind of connective relation that differs from others in that it must be encoded explicitly.
38. Whatever its status in formal logic, negation would not usually be considered a type of connective in natural language; as far as I know, Beilin & Lust's study is exceptional in this respect.
39. Not all instances of then are conjunctions:
- i. So he won't be going to California, then?
 - ii. This, then, was Murgatroyd's motive for killing him.
 - iii. It was then that I learned the whole story.
- In a Quirkian framework, at least the former two types of then would also be considered to be conjuncts, as would those that are called conjunctions here.

CHAPTER IV
EXPERIMENTAL EVIDENCE I: ADULTS

4.0 Introduction

In this chapter and the following one the collection and analysis of the experimental data on conjunction usage in children's texts will be described. The child data to be analyzed here were collected by M. Gopnik's Text Acquisition Project. The data elicited from the children will be compared with discourse collected from adult subjects using the same experimental situation.

This chapter will present the methodology for the experiment as a whole, and then discuss the results obtained for the adults. The children's results will be discussed in Chapter V, as will certain theoretical issues arising from consideration of the data.

4.1 Methodology

4.1.1 Materials

The purpose of the Text Acquisition Project mentioned above is to trace children's acquisition of the linguistic devices underlying textual cohesion in various types of discourse. The children tested in the study were two to five year olds at the McGill Community Daycare Centre. (As

will be seen, though, the two year olds spoke so little in the test situation that their data were not significant.)

Three picture books were constructed for the project. Each book has nine pictures depicting a sequence of events involving three characters: a prince, a princess, and a dragon. The pictures encode a narrative sequence with the three characters participating in a pleasurable activity (preparing for Christmas, going on a picnic, relaxing at the swimming-pool); halfway through, a minor disaster takes place, but the situation is saved and everything ends happily. (See Appendix A for pictures.) The plots were constructed in such a way that the events depicted are not only linked temporally but also exhibit various types of causal links, both "natural" (i.e. as a consequence of a natural law) and "intentional" (i.e. resulting from intentional states of the characters) (see Section 5.2.2).

For each of the picture books a set of nine questions was constructed, in order to elicit information about the children's comprehension of the temporal and causal links between the depicted events (see Appendix B). Thus, if certain relationships which had been intended to be encoded in the picture sequence were not encoded in a particular child's story, the questions could help determine whether he had in fact understood the depicted relationships. Therefore, if the child answered the questions correctly, one could infer that his failure to encode a particular relationship, e.g. causation, was not the result of an

inability to interpret the picture sequence. If, however, the child could not answer causally oriented questions, then one might not expect him to encode that relationship in his stories.

Two other picture sequences were also used on some children in the test sessions. These involved everyday, i.e. non-fairytale, characters. One depicts two children involved in a tree-climbing accident, and differs from the other story stimuli in that all the pictures are displayed on one page rather than on separate pages in a book.<1> The other story concerns a small boy having a temper tantrum (Non! A. Desmier. Paris: La Farandole, 1979). Neither of these two picture sequences was matched with a questionnaire.

4.1.2 Methodology

The children were tested in two different testing periods, 10 months apart. Thirty-four different children were tested, of whom nine were tested in both test periods, resulting in 43 individual test sessions.<2> There were six two year olds (1;8 to 2;3: 2 male, 4 female), 11 three year olds (2;5 to 3;9: 8 male, 3 female), 16 four year olds (3;8 to 4;10<3>: 8 male, 8 female), and 10 five year olds (4;11 to 5;5: 5 male, 5 female). A total of 17 girls and 17 boys were tested (with 23 test sessions of males and 20 of females). Of the nine children who were tested twice, two were tested at two and three years, four at three and four,

and three at four and five years old.

During the first test period, 32 children were tested: 6 two year olds (2 male, 4 female), 9 three year olds (7 male, 2 female), 10 four year olds (5 male, 5 female), and 7 five year olds (3 male, 4 female). Two experimenters (G. Farrell and M. French) were present at each interview during this test period. Each child was tested alone. The interview proceeded as follows: each child was first given a test to determine familiarity with books (The Sand Test (Sand. Marie M. Clay. Auckland: Heinemann Educational Books, 1972.))<4>; they were then shown one of the Dragon picture books, allowed to look at all the pictures at leisure and then asked to tell the story (known henceforth as the prompted story). After the child had made his attempt at telling the story, or, alternately, when it became clear that he was not going to tell the story at all, he was asked the questions pertaining to the picture book. The child was also asked to tell a story without visual stimuli (known as the free story). In this portion of the interview the child was encouraged to retell a fairytale or some such story or to tell about something that had happened to himself. The entire interview was taped, including the child's spontaneous conversation.

During the second test period 11 children were tested: 2 three year olds (1 male, 1 female), 6 four year olds (3 male, 3 female), and 3 five year olds (2 male, 1 female). During this test session only one interviewer (G. Farrell)

was present. This session differed from the first in several ways: 1) the Sand Test was omitted; 2) the children were asked to tell the interviewer how to play a game, with the goal of eliciting some explanatory discourse; 3) the Accident story and the Non! book were used as additional story prompts; and 4) each child was allowed to tell as many prompted stories as he chose, so that the length of the interview was regulated by the child rather than the experimenter.

For the purposes of my own research into conjunction usage, I required data from adult subjects using the same stimuli as the children. The adult subjects were 21 students at McGill, aged approximately 20 to 50 years old, 11 females and 10 males. Each test session proceeded as follows: the subject was first shown one of the Dragon books, allowed to look at all the pictures at leisure and asked to tell the story depicted. They were then asked the relevant set of questions. Next, they were shown the Accident story stimulus and asked to tell that story; after telling the two prompted stories, the subject was asked to tell a story without visual stimuli. Finally, the subject was asked to explain how to play a game. The entire interview, including conversation, was taped.

When performing the prompted story tasks, both children and adults were permitted to look at the pictures as they told their stories. It was felt that requiring them to memorize the sequences would both add unnecessary strain and

tension to the test situation and place undue emphasis on memory skills, which were not, after all, the focus of the study. The subjects were, though, required to examine the entire picture sequence before beginning to tell a story, in order that awareness of the entire sequence of events would result in a more coherent narrative. After all, if the storyteller himself does not know what happens next, it is difficult for him to produce a coherent story. (For results of a pilot study on some of the children's discourse, see Laubitz (1986).)

4.2 Analysis

Once the discourse samples had been collected and transcribed, a series of word and clause counts were done. Each subject's test session was divided into the different types of discourse to be studied: conversation, free stories, prompted stories (Nos. 1 to 5), question session, and game explanation. The total number of words and of clauses for each discourse type was determined for the adult and child corpora.

For the study of conjunction usage, it was clearly necessary to determine the number and type of clausal conjunctions in each corpus. (Conjunctions used phrasally were not counted.) In both total word and conjunction counts, "stammered" repetitions of words or phrases were considered to constitute one occurrence of the repeated

item. Items repeated for the sake of emphasis, on the other hand, were counted as more than one occurrence.

4.1.a Then it'll, then it'll, then it'll get, then it'll get worse. (EB; 4;0)

b She looks very, very scared, 'cause he broke his leg.
(EB; 4;0)

Thus, in (4.1.a) the underlined items were counted as three words (then, it'll and get) in the word counts, rather than as ten. In (4.1.b), on the other hand, both occurrences of very are counted, because the repetition is intentional, being used for stylistic reasons.

It is particularly necessary to mark stammered repetitions as constituting only one item when one is dealing with conjunctions. Since these words occur clause-initially, they are frequently subjected to stammered repetition, as this phenomenon is associated with planning problems which typically present themselves at the beginning of a clause. The speaker, having begun a sentence, realizes that he is not sure what to say next and resorts to "fillers", of which repetition is a typical example. (Items like mmm, uh and well are also common here.) Some examples are shown in (4.2):

4.2.a And s-, and she notices that_, Grandma looks kind of STRANGE. (CG; ad)

b Uuuh, then, then you have to pick up just one jack at a time. (IZ; ad)

For each discourse type and each age group two primary

kinds of analysis were done: both the frequency of conjunctions per 1000 words, <5> and the percentage of clauses headed by conjunctions were determined. The first test gives an indication of the gross frequency of connectives as a word class. The frequency of each individual conjunction is determined, as well as the relative frequency of the different semantic and syntactic classes.

In doing this frequency analysis, conjunctions that form part of false starts or broken off sentences are included, if the context indicates that they are being used clausally rather than phrasally; examples are shown in (4.3).

4.3.a So there's_, no, I'm not gonna tell you. (PM; 4;4)

b Should I look at the pictures when I? (JG; ad)

This means, therefore, that conjunctions heading clause fragments are included in this count.

It is also necessary, though, to determine what percentage of full clauses is headed by one or more conjunctions. Otherwise, the possibility would remain that one discourse type (e.g. stories) might appear to contain a greater number of conjunctions than another (e.g. conversation) only because one or the other type is more "fragmentary", i.e. is characterized by a larger number of unfinished clauses than the other. There is also the circumstance that some clauses are headed by a combination

or cluster of connectives, e.g. and then, but then if. So there is a possibility that a given discourse type might be characterized by the presence of more combinations than another, resulting in a larger total count, when the percentage of clauses headed by conjunctions might be the same in both.

A count was therefore made of all the complete clauses in the adult and child corpora and the percentage headed by one or more conjunctions was determined. But it is important to remember that certain types of clauses are not in fact conjoinable^{<6>}; these include that-complements, control clauses, relative clauses and some types of gerunds, in other words, all subordinate structures other than the adverbial subordinates that are actually headed by conjunctions (cf. 4.4).

- 4.4.a *I know and that John is a scoundrel.
- b *Linda longed and to go to Bermuda.
- c *Who was the man and whom you were talking to?
- d *I saw him and swinging from a branch.

It is important to note that such subordinate structures can be conjoined with each other, as in (4.5); it is only the initial member of such a set that is not conjoinable to its matrix clause.

- 4.5.a ...that John is a scoundrel and that Harry is honest.
- b ...to go to Bermuda and to write a bestseller.
- c ...whom you were talking to and whom May left with.
- d ...him swinging from a branch and her singing hymns.

(Note that we are distinguishing here only between clauses

that are syntactically conjoinable and those that are not. It might be argued that the initial clause of a text cannot be headed by a conjunction, inasmuch as there is nothing for it to be linked to; such factors are not taken into consideration here.)

Clearly, then, it is necessary to determine not only the total number of clauses but also the number of conjoinable clauses in order to get a realistic idea of the significance of a greater or lesser number of actually conjoined clauses. If, say, one text type is characterized by the presence of fewer conjoinable clauses than another text type, then the fact that fewer clauses are actually headed by conjunctions will quite conceivably not be an independent variable.

4.3 Adults' Discourse

4.3.1 Total Discourse

The adult subjects' results will be discussed first; they will provide some basis for comparison when the children's results are determined. In addition, the adults' results will be compared in this chapter to those obtained by Beaman (1984) and any differences will be discussed. All the tables referred to in this chapter and the next are to be found in Appendix D.

Table 4.1 shows the frequency indices for all clausal

conjunctions in the entire sample of discourse collected from the adults. As well as the indices for the individual conjunctions, frequency indices for the combinations or clusters of two and three conjunctions occurring in the corpus are provided. Each individual conjunction that occurs as part of a combination is also counted among the individual items; thus, an instance of the triple combination and so then would be tallied once among the combinations and once each for and, so and then. The two double combinations, however, which it might be considered to contain-- i.e. and so and so then-- would not be tallied up separately. Although I have listed the combinations found in the corpus, I will not be discussing them in great detail, but will merely comment on their relative frequency in different text types and at different ages.

This is done because, as will be shown, certain combinations are especially frequent in particular text types. Thus, the phenomenon of conjunction clustering in texts is of some interest. I do not, however, consider these combinations to be compound items, as Beaman (1984) appears to do, since she places and then, for example, in the same list as and and then. The semantic content of a combination like and so or and then is clearly compositional, i.e. based on the semantics of the individual items. (Certain combinations like and because do not even behave like compounds syntactically, see Chapter III, Fn. 4.) It was for this reason that each member of a cluster

has also been listed as an individual item: appearance in a combination does not appear to affect the individual importance of a conjunction.

As Table 4.1 shows, the adult subjects use a total of 21 different clausal conjunctions in their discourse. And is the most frequently used connective (with an index of 33.43), occurring approximately three times as often as the next most frequent, so (index 10.94). Several of the conjunctions, on the other hand, can be seen to occur with only negligible frequency, being found once or twice in a corpus of over 30,000 words. In all, eight different connectives-- and, so, because, but, then, when, if, and or-- make up 95.7% of all occurrences of conjunctions. And alone accounts for almost half (48.2%) of all occurrences.

Thirty-six different two- and three-word combinations are found in the data, of which only and then and and so occur with any degree of frequency.

Table 4.2 indicates the ratio of full clauses headed by a conjunction as a percentage of both the total clauses and the total conjoinable clauses in the sample. In addition, the ratio of conjoinable to nonconjoinable clauses is shown.

More than half (54.9%) of the total conjoinable clauses in the sample are, in fact, conjoined. Conjoinable clauses make up almost 70% of the total clauses in the sample; as we will see, this will prove to be a ratio that is more or less constant among all text types.

In the following sections the individual text types,

conversation, stories and game explanations, will be examined. Not only will the general frequency of conjunctions as a group be determined, but we will also see how the relative frequencies of the different semantic and syntactic classes of conjunctions vary according to text type.

4.3.2 Conversation

In conversation, as we shall see, conjunctions are used relatively infrequently. This circumstance will be discussed in greater detail when conversation is compared to other text types; this particular section will be primarily descriptive.

Table 4.3 shows the frequency indices for those conjunctions found in the conversational sample. One point that stands out is that, although and is, as expected, the most frequently used connective (having an index of 11.3), it accounts for only 23.3% of the total (or about half the proportion found in the total sample). Two other connectives, but (9.63) and so (9.45), occur almost as often. We also note that combinations of connectives are not frequent in conversation; this will be seen to contrast with other text types.

Table 4.4 shows the percentage of conjoined clauses in conversation. Slightly over 30% of all the conjoinable clauses occurring in conversation are in fact conjoined; again, this represents a relatively low frequency, as we

shall see when other text types are examined.

Tables 4.5 and 4.6 show the proportions of the different semantic and syntactic classes, respectively, as they are represented among the connectives found in conversation. As we can see in Table 4.5, the most common semantic class of connective in conversation is the causal; almost 40% of the sample are causal. The other three semantic classes are evenly distributed, each accounting for approximately 20% of the total.

Sequential temporals (then and asymmetric and) make up slightly less than half of the total group of temporal conjunctions, thus constituting about 10% of the total. They are not, therefore, a particularly significant group within the total conjunction corpus in conversation. (This contrasts with what we will see with regard to narratives.) Finally, we see that the symmetric, or non-temporal, use of and predominates, accounting for almost 70% of occurrences of this conjunction.

With regard to syntactic classes, <7> we see that Class 4, [-preposable, +phrasal], is the most frequent, making up about half of the total conjunctions. Class 3, [+preposable, -phrasal] (21.8%), is slightly more frequent than 2, [-preposable, -phrasal] (19.5%), whereas 1, [+preposable, +phrasal], is very infrequent, accounting for only 7.3% of the total. In sum, Bs, or coordinate conjunctions, make up 71% of the total and Ps, or subordinators, account for 29%; coordinate conjunctions,

then, clearly predominate, and the majority of these are the stereotypical [+phrasal] kind.

4.3.3 Stories

Stories, as we shall see in this section, differ quite strikingly from conversation with regard to several aspects of conjunction usage. This section will also include a comparison of the free and prompted story types, and the differences found between these two types will be discussed.

We had expected, given the temporally based nature of narrative discourse-- of which narrative texts are primarily composed-- that temporal conjunctions should be particularly frequent in stories (see Chapter II). This proved to be the case; however, certain other features of conjunction usage were found that had not been predicted and that at first seemed rather paradoxical.

We shall begin by simply comparing the results for stories and conversation, and then go on to discussing the possible causes of the differences found.

Table 4.7 shows the frequency indices for sentence connectives in all stories (i.e. both free and prompted). It is immediately clear that conjunctions as a word class are far more frequent in stories than in conversation, with an index of 74.98 per 1000 words as compared to 48.53 in conversation.<8> The most frequent conjunction, and, is more frequent in stories, accounting for more than half of the total (56.4%). It is also noticeable that combinations of

connectives are more frequent in stories than conversation, with 27 different ones being used, and an index of 6.46 as compared to 1.67.

Table 4.8 shows the frequency of conjoined clauses in stories. The greater frequency of conjunction use is also obvious in this context. Almost twice as many conjoinable clauses are actually conjoined in stories (62.4%) as in conversation (32.9%).

We note, however, that the ratio of conjoinable to nonconjoinable clauses remains almost the same, approximately 70% conjoinable to 30% nonconjoinable. This ratio, in fact, fluctuates very little throughout the entire corpus of discourse. We may therefore assume it to be a constant. The high frequency of conjoined clauses in stories, then, is not influenced by the frequency of conjoinable clauses but varies independently. The possible reasons for this high frequency will be discussed at the end of this section. (It is noteworthy also that this frequency of conjunctions in narrative seems to have another reflection in the comparatively high frequency of conjunction clusters. Thus, in stories it is not only the case that the percentage of clauses headed by connectives is high but also that individual clauses tend to contain more connectives.)

But our predictions concerned only the particular types of conjunctions used in different discourse types, and not their frequency as a class. This interesting phenomenon

will be discussed in greater detail below. Now, though, we shall examine the differences in the semantic classes of conjunctions used in conversation and stories.

Table 4.9 shows the frequencies of the different semantic classes of conjunctions in stories. The proportions of different types of conjunctions are seen to be very different from in conversation. Temporal conjunctions are now the most frequent class (over 40%), with causals and additives accounting for about 25% each, and adversatives occurring infrequently (6%). Sequential temporals make up about 85% of the class of temporals, in themselves accounting for almost 40% of total conjunctions. Similarly, we see a striking reversal in the ratio of symmetric to asymmetric and, with the asymmetric (or sequential temporal) function predominating (57.1%).

All these features correspond to our expectations (see also Section 2.2). The strongly temporally based nature of narrative discourse, emphasized by Labov (1972) and de Beaugrande (1980), manifests itself through the frequent use of overt temporal conjunctions in general, and sequential temporals in particular. The storytellers show a strong tendency to mark temporal linkages between events by means of sentence connectives. Causal linkages, though less frequently marked, are also quite strongly expressed.

In Table 4.10 the relative frequencies of the syntactic classes are shown. We see that the frequency of Class 4 conjunctions has increased considerably, to 67.5% of the

total, with a corresponding decline in all three other classes. We note also that the relative frequencies of Classes 2 and 3 have reversed, with 2 being more frequent in this text type. These changes-- i.e. the increase in the frequencies of Classes 2 and 4-- result in Bs accounting for 84.9% of the total conjunctions and Ps for only 15.1%, considerably less than in conversation.

What is not clear is whether one can adduce any independent syntactic grounds for this shift, or whether it simply reflects those semantic factors discussed above, viz. the high frequency of the sequential temporals and and then (Class 4), the low frequency of the non-sequential temporals (Class 3), and the relatively high frequency of so (Class 2). It is not impossible that syntactic factors (e.g. a tendency to avoid subordination in narrative, cf. Labov, 1972) might play a role here, but this seems unlikely because the percentage of nonconjoinable clauses is the same in both text types: why would it be the case that only adverbial subordinate clauses should be shunned in narrative discourse, whereas other types of subordinate clauses are permitted? In short, it appears highly probable that the different proportions of syntactic conjunction classes in conversation and stories are simply a reflection of the difference in semantic classes.

De Beaugrande's (1980) prediction concerning the frequency of subordinate structures in narrative discourse (see Section 2.1) is not borne out. Among conjoinable

clauses, the percentage of subordinates is considerably lower in narrative than in conversation. The percentage of non-conjoinable clauses (which are also subordinate) remains approximately the same. Overall, then, there are fewer subordinate structures in narrative than in conversation. As we have seen, though, it is dubious whether syntactic factors play much of a role in the choice of conjunctions in these text types; semantic factors appear to be crucial, with the relative lack of subordinate structures falling out from the prevalence of sequential temporal conjunctions.

Let us now compare the two types of story collected, namely prompted and free. It had been hypothesized, when setting up this study, that the presence of the visual story stimuli during the story-telling session might result in the prompted stories differing from the free stories in that they might have a greater proportion of descriptive to narrative discourse. With regard to conjunctions in particular, one might then expect fewer temporal and causal conjunctions and a higher proportion of additives.

Tables 4.11 and 4.12 give the total frequencies of conjunctions in the two story types. The most obvious difference that these two tables reveal is that conjunctions are more frequent in free stories (index 80.18 per 1000) than in prompted stories (68.63 per 1000). As we have seen, high conjunction frequency is a characteristic of narrative as opposed to conversation; the free stories seem to display this characteristic rather more strongly than the prompted.

As Tables 4.13 and 4.14 show, however, there is no great difference in the number of conjoined clauses in the two story types. So what we are seeing is not a greater proportion of clauses headed by conjunctions, but rather, it seems, a greater conjunction density per clause. As a comparison of Tables 4.11 and 4.12 shows, combinations of conjunctions are more frequent in free stories (index 7.01 as compared to 5.67, with a larger number of different clusters also being found in free stories), which offers some support to this hypothesis.

It is comparison of Tables 4.15 and 4.16, though, that yields perhaps the most striking difference between the two story types. As we can see, the temporal class is the most frequent in both prompted and free stories, but it is considerably more frequent in the prompted stories, making up 48.9% of the total as compared to 39.4% in the free. Causal connectives almost match temporals in frequency in free stories (31.8%); in prompted stories they are relatively infrequent (17.2%), and the additive class is in second place. We also note that sequential temporals are considerably more frequent in prompted stories; they make up 43.5% of the total temporals, compared to 32.6% in free stories. Interestingly, though, the proportion of asymmetric to symmetric and is about the same in both types.

We have found, then, that there is, in fact, a difference between prompted and free stories that is manifested in the usage of conjunctions. This difference is

reflected to some extent in the relative frequencies of conjunctions in the two types, but more significantly in the proportions of the different semantic classes. The prediction discussed above was only partially borne out: causal connectives are less frequent in the prompted stories but temporal connectives turn out to be more frequent. For some reason, subjects telling a story about pictures do mark the temporal linkage of events, but are less inclined to mark causal links. I will not go into detail about the probable reasons for this in this section, but will save the discussion for Section 5.1.3 on children's stories, as I believe that those results will shed further light on this issue.

One problem that has yet to be discussed here is the cause of the high frequency of conjunctions in all stories. Why are they so much more frequent in stories than in conversation?

One possible explanation is based on the monadic (i.e. monologic) nature of narrative as opposed to the dyadic (or indeed polyadic) nature of conversation. One might argue that there is simply a tendency to link clauses to each other within one's own speech rather than making such links with the speech of one's interlocutor. As stories tend to be extended monologues, they would naturally be the site of many interclausal links (i.e. cohesive devices) and one of these devices would, of course, be conjunctions.

This does not seem to be a valid hypothesis, though.

In a conversation, the two or several speakers are in effect striving to produce one cohesive discourse between them; where this is not the case, the result can only be a failed conversation. There is no a priori reason why the cohesive links between the contributions of different speakers in a conversation should not take the form of conjunctions as well as any other device.

That dyadic discourse need not have a particularly low frequency of conjunction usage is shown by reference to the question sessions. The question-answer pair is a quintessentially dyadic construct. Yet the question sessions have a higher frequency of conjunctions as a class (index 59.12) and of conjoined clauses (41.7%) than conversation, although the frequency is considerably lower than in narrative. (The question sessions will be discussed in greater detail below.) In fact, as we shall see, the nature of the questions posed is such as to elicit structures with connectives from the subjects. In this dyadic discourse type, then, cohesion between the contributions of two speakers is established relatively frequently by the device of conjunction.

If it is not the monadic nature of stories that accounts for the frequency of sentence connectives then what does? I would argue that it is the result of the fact that the very nature of narrative is based on certain relationships that are particularly felicitously expressed by means of conjunctions. Narrative discourse, which makes

up the prime component of narratives, is essentially characterized by temporal and, to a rather lesser extent, causal links between the events talked of. As we saw in Section 3.3, the use of conjunctions is an extremely efficient way of encoding such links. Conjunctions such as before, after, while, and especially then are compact means of ensuring that temporal ordering is unambiguously encoded.

The use of such temporal expressions as a few minutes later, shortly thereafter, the next day, etc., is another method of unambiguously marking temporal relationships. Such expressions are used when the speaker feels them to be necessary, but they are rare in comparison to temporal conjunctions. Not only are they less compact but they are frequently unnecessarily specific. What is important in narrative is the temporal and causal relationships of events to each other. It is necessary to know the sequence of events; it is usually not necessary to have a precise chronology.

At the other extreme one contemplates the possibility of constructing a narrative without any explicit conjunctive links whatsoever, simply listing events in the order of occurrence. Grice's (1975) Maxim of Orderliness should ensure correct interpretation; unless evidence to the contrary is available, one assumes that the order of events in a story corresponds to their order in real (or fictive) time. Although a text constructed in this fashion is technically possible, no such examples are found in the

corpus, nor would one expect to find any. Even though unambiguously interpretable, such a narrative would seem anomalous to most (if not all) native speakers. Storytellers appear to feel the need to encode explicitly the characteristic temporal and causal links underlying narrative; in conjunctions they have a very efficient means of doing so. For this reason, conjunctions are very frequent in stories as compared to conversation.

4.3.4 Game Explanations

The task of explaining how to play a game has proven to be the most difficult one assigned to the subjects of this experiment. Among adults as well as children there is a fairly high proportion of explanations that are unsuccessful, in the sense that a third party armed with such an explanation as well as the necessary equipment would not be able to play the game in question properly.

Ideally, such an explanation should have a hierarchical form with a series of contingent rules expressed as conditional structures. Most if not all games have rules indicating the type(s) of behaviour required when each of a number of possible situations arises as a result of the actions previously taken. These take the form of conditionals: "if Situation A arises you can take either Action X or Action Y; if you do X then Situation B will result, whereas if you do Y then Situation C will result, etc." Depending on the complexity of the game, the number

of possible choices at each node of the hierarchical tree-- and thus the number of possible scenarios-- will be greater or lesser.

The participants in this study were encouraged to explain games of relatively low complexity, i.e. children's outdoor games or "simple" board or card games. Even the simplest such games, however, have their essence in the unfolding of alternate scenarios resulting from the making of choices (either intentional or chance-based) at various branching nodes of the game. A game with no choices is not a game, as it has only one possible outcome.

The ideal game explanation, then, as was mentioned above, should proceed hierarchically; as each "crossroads" is reached, the possible choices should be listed and the consequences of each outlined, so the hearer realizes how these may affect the outcome of the game. With regard to conjunctions, one would expect a large number of the conditional causal if, with or without the associated then.

None of the explanations has the ideal form. Indeed, it is doubtful that this would be attainable in unplanned discourse (see Section 5.1.5); such a complex structure would require a degree of planning not permitted to the participants in this study. Some of the subjects did produce small hierarchical sequences within the larger framework of the explanation; an example is given in (4.6).

4.6 For example_, um, you can really only steal someone's stones if they have two in a row. If they have_, only one down or if they have more than two in a row, they're safe. Even if you surround their stones with two stones of your own_, you won't be able to steal them.
(LD; ad; explaining Pente)

The fragment in (4.6) lists a number of alternative courses of action-- surrounding one, two, or more than two of the opponent's stones-- and shows what the consequences of each would be. For this reason, if does indeed turn out to be particularly frequent in this text type: there are short hierarchical sequences, even though the texts as a whole are not structured in this way.

For many of the speakers, though, the game explanation had essentially the form of a narrative. In fact, many did not even state the goal of the game (i.e. how one wins) at the beginning of their explanation, but left it for the end; as in a real-life game, one does not know whether one has won until the end. This orderliness, as we have seen, is the characteristic of narrative. Thus, for many speakers, the organizing structure of these explanations is the chronological order of events rather than the contingent nature of possible alternatives.

The use of conjunctions in game explanations likewise shares many characteristics with that in narrative. Table 4.17 lists the total conjunction frequencies for this text type. The frequency index for conjunctions in this text type (75.53) is higher than for any other, including stories; conjunction clusters also occur more frequently

than elsewhere. It is also noteworthy that if is more frequent here (index 9.47) than in any other text type, coming second only to and (index 32.84). This is as we would expect, given the considerations discussed above.

In Table 4.18 the frequency of conjoined clauses is shown. Here we see that the proportion of clauses headed by one or more conjunctions does not differ greatly from that found in stories, i.e. approximately 60%. It seems likely, then, that the higher conjunction frequency seen in Table 4.17 is, at least in part, a result of a greater number of combinations (total index 9.27).

Table 4.19 shows the semantic classes of conjunctions found in the explanations. The relative proportions of the various classes are almost exactly the same as they are for stories. Temporal conjunctions are the most frequent, making up 43% of the total; the increased frequency of if in explanations has not resulted in any increase in the total strength of the causal category (26.9%). It is noticeable, though, that sequential temporals do not make up quite as large a proportion of the temporal class in explanations as they do in stories, 77.4% as opposed to 85.6%.

Table 4.20 represents the proportions the four syntactic classes of conjunctions. As usual, Class 4 is the most frequent (62.4%). But we see that Class 1 (13.3%) has increased in frequency to the extent that it surpasses both Classes 2 and 3 (11.8% and 12.5%, respectively); this is found in no other discourse type collected and represents a

marked difference from stories in the percentages of the different classes. It is clear that this increased frequency is a reflection of the increased frequency of the Class 1 connective if in the explanations; as we have seen before, semantic factors are driving the syntax. Bs are found to make up 74.2% of the total conjunctions and Ps 25.8%, a proportion more like that in conversation than in narrative. This again is primarily a function of the frequency of if.

What we have seen in the game explanations, then, is a high frequency of the particular conjunction if, reflecting a tendency to encode those contingent relationships that are so much a factor in sets of rules such as underlie games. The conditional connective is therefore more frequent in these explanations than in other types of discourse collected.

We also find several areas of marked similarity to the stories, notably in the frequency of conjoined clauses and the predominance of temporal conjunctions, notwithstanding the individual frequency of if. These would seem to indicate that the explanations are, to a fairly large extent, made up of narrative discourse (as was predicted in Section 2.2); they partake to a large degree in the nature of procedures, which, as we have seen, Polanyi (1985) asserts also to be composed of narrative discourse. There also seems to be a tendency for speakers to give narrative structure to types of texts which do not inherently have it,

as Linde & Labov's (1975) work on apartment descriptions also shows. As we saw in Chapter II, it is possibly the familiarity of this text type that makes it the preferred organizing structure for dealing with discourse types that the speaker is less used to coping with, and therefore feels less secure with.

4.3.5 Discussion

We have examined here the types and frequencies of clausal conjunctions used by adults in three different text types-- conversation, stories and game explanations-- and seen how the differences that are found can be correlated with more basic features of these text types.

Conversation is marked by the relative infrequency of conjunctions and by the comparatively even distribution of the four semantic classes of conjunctions, with causals being the most frequent, and the other three classes all having the same frequency. This semantic balance seems to reflect the fact that there is nothing in the inherent nature of conversation that should lead to a marked imbalance in the classes of conjunctions used. Anything may be the topic of conversation, and the relationships between the events and entities discussed may be of any nature. (It is for this reason, no doubt, that it is so hard to pin down the defining linguistic characteristics of conversation; definitions tend to be made in terms of its dyadic nature instead (cf. the passage from de Beaugrande (1980) cited in

Section 2.1).) Thus, all types of conjunctions may be expected to crop up in this text type, subject only to the progress of the individual conversation; even the otherwise rare adversatives are comparatively frequent here.

We also note that there is a fairly strong tendency for conjunctive links to remain implicit in conversation, as reflected in the relative rarity of conjunctions. This contrasts quite markedly with their frequency in stories and explanations. This seems all the more striking when one considers the diversity of the relationships expressed in conversation as compared to the fairly constrained nature of narrative in particular. Surely, there should be fewer conjunctions in stories, if conjunction usage were entirely a matter of pragmatic necessity. It is, as we have seen, the nature and function of narratives to encode the "ordered directionality of linkage" of events (de Beaugrande, 1980; 197). Sequential temporal conjunctions, at least, should be superfluous. As we have seen, though, they are not. Storytellers are not content to rely on the Gricean Orderliness Maxim to ensure that this temporal ordering is conveyed. Rather, they seem to feel that it is so crucial to the essence of narrative that it must be explicitly encoded. This they do by means of conjunctions, with the result that conjunctions are particularly frequent in narrative.

A couple of other points have arisen that are of some interest and will be re-examined later. We have seen that

game explanations, although constructed in part of discourse encoding a contingency hierarchy (reflected in the if/then construction), tend to be composed in the main of narrative discourse. We have also seen that causality is encoded more often in free stories than in prompted stories, and thus that the former seem to correspond more closely to the ideal narrative than the latter (see Section 2.2). Finally, we have seen that the proportion of conjoinable to nonconjoinable clauses maintains a constant 70%/30% ratio regardless of text type.

It may be of some interest to compare this study with that of Beaman (1984) on coordination and subordination in narratives. The goal of Beaman's study was to determine the relative complexity, as measured by the frequency of various subordinate structures, of spoken and written stories; her findings for oral narratives can reasonably be compared with this study. Beaman's subjects for the spoken corpus were 20 female students. All the narratives collected were prompted; the stimulus was a short silent movie (the "Pear Film").

Several factors differentiate Beaman's results from those described in this study. The frequency index for conjunctions in her sample is very high, 110.3 occurrences per 1000 words.<9> This is much higher than the indices obtained for either prompted or free stories in this sample-- remembering too that prompted stories have a lower index than free stories-- but it may be seen as confirming

conjunction frequency as a mark of narrative discourse.

In addition, she found that and occurred with very great frequency, having an index of 83. This is much higher than the index for and in my corpus of stories. What makes it all the more notable is that no other single conjunction has a frequency anywhere approaching that of and; the next highest is then with an index of 10.9 (see Fn. 8). The other conjunctions thus have comparable frequencies to those found in prompted stories here. It seems to be to a large extent the high frequency of and that causes conjunctions as a group to be more frequent in Beaman's sample; and makes up 73.2% of the conjunctions in her sample, as opposed to 63.6% of the conjunctions in our prompted stories.

Beaman accounts for the ultra-high frequency of and in her spoken stories by saying that it is used "as a filler word, a weak connective, as the speaker is planning his or her next utterance. This use of and contributes to the fragmented quality of speech" (61). She attributes the frequency of and to the intolerance of speakers for silence; it is a planning phenomenon like the repetitions mentioned above.

In her corpus of written stories, and is much less frequent, having a frequency index of 36.9. This is very close to the index in my prompted story corpus of 43.63, which would appear to cast some doubt on Beaman's "filler word" hypothesis. The prompted stories studied here are (presumably) as spontaneous and unplanned as those she

collected; the subjects were given no more than a few minutes planning time for both prompted and free stories. Why then should they not also show what is allegedly a characteristic of unplanned spoken discourse? One possibility is that Beaman counted each occurrence of repeated items. Her statement that the frequency of occurrence is determined by "a 'blind' counting of each instance of a particular word" (60) is somewhat unspecific on this matter. If this is in fact the case, then we may be able to assume that my findings and Beaman's match more closely than at first seems probable.

On other matters, it is difficult to compare Beaman's study with this one, as the aims of the two are so different. For instance, although she indicates how many of the various types of subordinate clauses occur in her sample, she does not provide a complete clause count, so one is unable to find confirmation in her work of the constant proportion of nonconjoinable clauses found in this study.

Notes to Chapter IV

1. This picture series was devised by M. Paradis for use in testing aphasics. It has appeared in his book The Bilingual Aphasia Test (Hillsdale, NJ: Lawrence Erlbaum Associates, 1987).
2. It had originally been intended to retest all the original subjects, but the high turnover rate at the McGill Daycare Centre made this impossible. All the original children who were still available were retested.
3. The discrepancy observable in the fact that the three year old group ends at 3;9 whereas the four year old group starts at 3;8 results from the fact that the 3;8 year old in question was being tested for the second time. As he had been placed with the three year olds in his first test, he was automatically grouped with the four year olds in his second. Any child tested twice was automatically counted as a year older at the second test, even though this was not always the case; no child has two test sessions assigned to the same age group.
4. The Sand Test sessions were not transcribed, as that test consists primarily of nonverbal activity on the part of the child, i.e. pointing to the relevant object, etc. For this reason, Sand Tests do not form part of the corpus examined here.

All of the children proved very familiar with books. This was not surprising, as not only were their parents members of the University community, but they were also read stories daily at the Daycare Centre.

5. The frequency index of occurrences per 1000 words was chosen for two reasons: first, it is suitable for use with items that may occur very rarely (e.g. one occurrence per sample) since the indices obtained are ten times higher than the percentage of the corpus occupied by a given item, and one therefore does not have to deal with multiple decimal places as one would if one calculated percentages. The larger numbers are simply easier to deal with. The frequencies of large classes of items (e.g. clause types, or semantic classes of conjunctions as a proportion of total conjunctions) were calculated as percentages of the total. The second point is that this method facilitates comparison with the work of Beaman (1984), who also uses it.
6. In this section I use 'conjoinable' to mean "able to be headed by a lexical connective." Although linkage effected without an actual connective is also a type of conjunction (using the term here to denote the process), I will not here refer to clauses linked in this fashion as 'conjoined'. Likewise, 'nonconjoinable' is used to mean "unable to be headed by a lexical connective."

7. In the tables accompanying this chapter, I continue, for interest's sake, to indicate the frequency of Class 1 conjunctions separately, although they have been found not to constitute a separate class. All the examples considered here (since we are considering only clausal connectives) will ultimately be assigned to Class 3, as there are no occurrences of adversative if (without even) and no occurrences of though that could be Bs. Thus, when the total frequencies of Bs versus Ps are given, this will mean Classes 2 and 4 versus Classes 1 and 3.
8. No statistical tests have been done as a statistician has informed me that the results obtained here do not require such tests (R. Bracewell, p.c.).
9. Beaman divides what I am calling conjunctions into three classes: coordinate and subordinate conjunctions and temporal adjuncts. She also counts combinations such as and then as single items. In addition, certain items that she counts as conjunctions I do not, e.g. where. However, since she gives the actual numbers as well as the frequency indices for all these items, and also provides a complete word count, one can fairly easily determine the frequency of the individual items

that we are interested in here. There is some dubiety, though, as to whether she counts stammered repetitions as one item or more; as we shall see, this makes it uncertain whether her results can be exactly compared with mine.

CHAPTER V

EXPERIMENTAL EVIDENCE II: CHILDREN

5.0 Introduction

In this chapter the corpus of discourse collected from the children will be analyzed. The children's use of sentence connectives in the text types under consideration-- conversation, stories, and game explanations-- will be compared to the results obtained for adults. The developmental changes that can be observed by means of comparison of the age groups (three, four, and five years) will also be discussed.

In addition, certain theoretical issues which were only hinted at in the previous chapter will be dealt with more fully in this one.

5.1 Child Data

5.1.1 Total Discourse

Our initial hypothesis is that the children's conjunction usage essentially resembles that of the adults, i.e. that conjunctions will be used much more frequently in stories and explanations than in conversation. Temporal conjunctions should predominate in narratives, whereas in conversation causals should be most frequent. We might,

however, expect children to use conjunctions less frequently than adults in all text types, as they have probably not fully mastered the use of conjunction as a cohesive device (see Section 3.4). Similarly, we would expect the children to have mastered fewer different conjunctions than the adults have (remembering that certain connectives, such as whereas, yet, and unless, are rare in the adult corpus). The older children, though, should use conjunctions more frequently and more correctly than the three year olds.

First we will briefly examine the frequency of conjunctions and of conjoined clauses within the children's total discourse, to see if any obvious large-scale differences from the adult data are to be found. Table 5.1 shows the frequency indices per 1000 words of conjunctions in total discourse, first for the children as a group and then for each age group.

We first observe that the children use fewer different conjunctions than the adults do, 15 as opposed to 21. Of the six conjunctions not found in the children's corpus, two (once and since) might be accidentally absent; the remaining four (unless, either, whereas, and yet) do not, in all probability, form part of the children's lexicon. It is to be noted that none of the six is particularly frequent in the adults' discourse, and three of them occur only once each. <1> As was the case with the adults, and is the most frequently used conjunction (index 31.05), being used approximately twice as often as the next most frequent,

because (index 15.49).^{<2>} Six conjunctions-- and, because, then, but, so, and when-- comprise 97.6% of all occurrences of the class. And accounts for 41% of all conjunctions used. In these respects, the children's data prove similar to the adults'; there are fewer members in the most favoured group of conjunctions (if and or are missing, but both are acquired late; see Section 3.4) but no really striking differences are seen.

The children use conjunctions more frequently than the adults, though. This finding was unexpected. And it is clear that, although children use far fewer different conjunction combinations, such combinations are still about twice as frequent as in adults' discourse; this obviously stems from the frequency of one specific combination, and then (index 9.34).

If we compare the different age groups,^{<3>} we see that the three year olds use only 7 different conjunctions, whereas the four and five year olds use, respectively, 13 and 12 different ones. (The difference between the fours and fives in this respect probably has no significance.) We also note that the frequency of conjunctions as a class rises steadily, from 59.31 for the threes to 82.6 for the fives; again, though, the fours and fives do not differ greatly. The frequency of combinations also rises with age.

Table 5.2 shows the frequency of clauses headed by one or more conjunctions, for all the children and for each age group. This analysis reveals some significant differences

between the children and the adults. First, although conjunctions as a word class are more frequent in the children's discourse, the percentage of conjoinable clauses actually headed by a conjunction is lower, almost 20 percentage points lower for the children as a group. One of the factors contributing to the different results obtained by the two methods of analysis is undoubtedly the greater frequency of conjunction clusters in children's discourse.

We can see that the ratio of conjoinable to nonconjoinable clauses in children's discourse is approximately 90% to 10%. Thus, considerably fewer nonconjoinable clauses are used by the children (10%) than by the adults (30%). This is not particularly surprising, given the nature of the nonconjoinable clauses: various types of subordinate structures (see examples (4.4) and (4.5)) (cf. also Tavakolian, 1977; Otsu, 1981). But the children are similar to the adults in that the proportion of nonconjoinable clauses remains fairly constant across all discourse types and for all the age groups examined here.<4> One can infer from the difference between the children and the adults that greater use of the non-adverbial subordinate clauses appears some time after age five. But we can again safely assume that any differences in conjunction frequency observed between discourse types or age groups are not a factor of the frequency of conjoinable clauses.

It is therefore particularly interesting to note that the proportion of actually conjoined clauses rises markedly

from age three to age five. The frequency of conjoinable clauses does not rise in the age groups studied here; the increased frequency of actually conjoined clauses, then, is an independent factor. We thus have two variables both of which change with age (as shown by the differences between the children's and adults' discourse) but only one of which changes within the time frame (three to five years old) studied here. Given that the frequency of overtly conjoined clauses increases between three and five years, while the frequency of conjoinable clauses remains stable, one can assume that the children are making considerable progress with the use of conjunctions at this age.

5.1.2 Conversation

Our prediction was that children would use conjunctions relatively infrequently in conversation, and in fact, like the adults, children do use conjunctions comparatively sparingly in this type of discourse.

Table 5.3 shows the frequency per 1000 words of conjunctions in conversation for the children as a group and then by age groups. The frequency index for conjunctions for the children as a group (44.93) is not very different from that found for adults (48.53). One difference from adults lies in the frequency of and; and alone makes up almost 40% (38.8%) of the total body of conjunctions, as compared with less than 25% in adult conversation. It is also the case that the frequency of and declines with age,

from 45.9% for the three year olds, through 38.6% for the four year olds, to 33.8% for the five year olds. As the children acquire more conjunctions, it seems, their reliance on the basic and declines. Even among the five year olds, though, there is no sign of "rivalry" by other frequently used conjunctions, e.g. but or because, as there is in adults' conversation (see Section 4.3.2). And, as we have seen, is the first conjunction to be acquired (cf. Clancy et al. (1976), Bloom et al. (1980)), and it remains the most frequently used, as this study and Beaman's (1984) show for adults. Clearly, it takes some time for the mastery of a variety of conjunctive relations, and of specific conjunctions, to result in any real decrease in the use of this primary connective.

Table 5.4 shows the frequency of conjoined clauses in the children's conversation. The results shown in this table indicate that the children produce fewer conjoined clauses than do the adults in conversation. For the children as a group, only about 25% of conjoinable clauses are actually conjoined.

When comparing the different age groups of children, we observe a rather puzzling phenomenon; the four year olds are producing a larger number of overtly conjoined clauses (28.9%) than either the three year olds (20.3%) or the five year olds (23.4%). The same phenomenon is observable in Table 5.3. But, whereas in total frequency the fours produce higher indices than both threes and fives, who

differ from each other less than usual, with regard to frequency of conjoined clauses the fives are found to be midway in between the threes and the fours.

In other text types, the four year olds produce fewer conjunctions than the five year olds. Generally, this can be seen as a sign of increased sophistication in the older children. It is difficult to know what the fundamental cause of the anomalous pattern in conversation is. Examination of the results for the individual children reveals that six of the four year olds, all but one of them among the most productive speakers in the sample, produced an exceptionally high number of conjoined clauses in conversation. None of the five year olds stood out from the group in this way. Of these highly "pro-conjunction" four year olds, only two produced an unusually high number-- i.e. conspicuously more than the norm-- of conjoined clauses in their stories. Thus, the odd data in the fours' conversations seem to stem from the output of a small group of children-- few in number but highly verbal-- who raised the total conjunction usage of the fours higher than that of the more uniform fives. But why some four year olds should use a particularly large number of conjunctions in conversation but not elsewhere is not obvious. With regard to the age difference, though, one might hypothesize that the five year olds have all attained some developmental plateau, with the result that they form a rather homogeneous group, whereas the four year olds are in a period of flux,

with greater variation among children.

The different semantic and syntactic classes of connectives occurring in children's conversation will be examined next. Table 5.5 shows the semantic classes found in conversation. Comparison of this table with Table 4.5 makes it instantly clear that the children differ from the adults in that temporal conjunctions are used most frequently in their conversation, instead of causals. Like the adults' conversation, the children's conversation shows a pattern of three fairly balanced semantic classes of conjunctions and one more frequent group; unlike the adults, the children's most frequent class is the temporals. Temporal conjunctions account for 33.4% of the total, with the other three classes containing approximately 20-25% each.

This increase in frequency of temporal conjunctions at the expense, so to speak, of causals is not confined to conversation, as we will see. Thus, one characteristic of children's discourse as compared to adults' discourse seems to a lower frequency of causal connectives and a concomitantly higher frequency of temporals. (See also Peterson & McCabe, 1983; their findings were discussed in Section 2.3.) The implications of this finding will be discussed in greater detail below, after the other text types have been examined.

One further point of interest concerns the subgroup of sequential temporal conjunctions. These form a much larger

proportion of the temporal class among children (78.5%) than among adults (48.1%). We also see that this group declines in frequency with age, with the three year olds using virtually all sequentials, the fives using only about two-thirds sequentials.

The syntactic classes of conjunctions found in children's conversation are shown in Table 5.6. Comparison of this table with Table 4.6 reveals considerable differences from the adult pattern. Class 4 conjunctions are far more frequent in children's conversation, making up 73.8% of the total for all children; both Classes 1 and 2, on the other hand, occur with very low frequency indeed (1.8% and 3.9%, respectively). This is, at least in part, one more reflection of the temporal/causal reversal: the high frequency of then and low frequency of so in the children's conversation are affecting the syntactic pattern. The aggregate frequency of Bs turns out to be 77.6% and that of Ps 22.4%; Ps are less frequent than in adults' conversation, but not extremely so.

We also see a fairly clear pattern of change with age among the children, with Class 4 decreasing (from 83.6% for the threes to 63.6% for the fives) and Classes 1,2, and 3 increasing in frequency from three to five. A closer approach to the adult pattern is achieved by age five. And among the fives we find the adult-like proportions of 71.4% Bs and 28.6% Ps; this compares to 88.3% Bs and 14.8% Ps for the three year olds. It is, in fact, interesting to note

that, although the syntactic classes of conjunctions used in conversation change with age from three to five, approaching the adult pattern more closely, the semantic classes do not. This difference is quite striking; it would seem to be based, in part at least, on the lowered frequency of the sequential temporal conjunctions with increased age. Thus, although the five year olds still use mainly temporal conjunctions in conversation (32.5% of the total), they are less reliant on the sequential temporals and and then than the three year olds. The older children are also able to use the more semantically (and syntactically) sophisticated Class 3 temporals, such as when, before, and after.

5.1.3 Stories

Our hypothesis concerning this text type is that conjunctions should be used frequently in stories, with temporal conjunctions making up the most frequently used semantic class. The important intra-narrative links should be clearly marked. Indeed, we find that among the children, as among the adults, the story text type is characterized by the high frequency of conjunctions. There are differences between the two groups, though, as we shall see.

Before discussing the children's use of conjunctions in stories, though, I must state how stories were defined, as compared to the other types of discourse collected. For the purposes of this study, a story was deemed to be a sequence of clauses describing an event or series of events (real or

fictional), and not interrupted by utterances on the part of the interviewer with any significant content. As well as such attention-markers as "Mhm" and "Really?", the interviewer might use such prompts as "And then what happened?" or "What did they do next?", that is, attempts to get the child to resume speaking. But more precise questions were held to interrupt a story. All semantically contentful speech must be produced by the storyteller, such that, if the interviewer's contributions were removed, one had a coherent story and not a series of answers to questions. Using this criterion, a number of children's attempts at stories were deemed not to be successful stories, and were relegated to the conversation sample.

Table 5.7 shows the frequency indices of conjunctions in all the children's stories. This table reveals quite strikingly the high frequency of sentence connectives in children's stories (index 132.37 for all children) as compared to conversation (index 44.93). In fact, by the index of occurrences per 1000 words, the children as a group use conjunctions almost twice as frequently as adults in their stories. The frequency is highest for the five year olds (index 154.19). Thus, the five year olds' results seem rather less similar to the adults' than do those of the younger children. This type of finding will recur and will be discussed in detail below.

It is also clear that the children use the combination and then extremely frequently; this combination alone has an

index of 30.26 in stories. This is completely different from anything found in the adults' corpus.

And is, as expected, the most frequently used individual conjunction (index 70.79), accounting for 53.5% of the total. This corresponds very closely to the adults' stories, where and accounts for 56.4% of the conjunctions used. It is notable, however, that the frequencies of and in conversation and stories are much closer in children's discourse than in adults'; the adults, as we have seen, use and twice as frequently in stories as in conversation.

It is also interesting to see that the children's second most frequently used conjunction, then (index 43.68), also accounts for quite a large proportion of the total, 33%. This also contrasts with the adults' results, where the second most frequent conjunction, so, makes up only 17.2% of the total.

The three year olds in the sample did not produce very many stories; their total output of this type of discourse amounts to only 160 words, 24 clauses. This is much less data than was elicited from the four and five year olds. Therefore, it was decided not to examine this group's results in any detail, nor to compare them with those obtained from the older children, given that analysis of such a small corpus can lead to skewed results and/or a lack of statistical significance. (The results for the three year olds in each analysis will still be shown in the tables for interest's sake, as are those of the two year olds,

where applicable.) The same applies, with even greater force, to the game explanations, of which we elicited only one from the entire group of three year olds. In this section and the next one, then, the focus will be entirely on the four and five year olds.

Table 5.8 shows the percentage of conjoined clauses in the children's stories. According to this measure, the children's results seem quite similar to those of the adults. We find that the children actually use conjoined clauses less frequently than the adults; nevertheless, the percentage of conjoinable clauses headed by one or more conjunctions is quite similar for both groups, 57.7% for the children and 62.4% for the adults. Comparison of these results with those shown in Table 5.7 and discussed above reveals yet again that the children are using a very large number of conjunction clusters-- in particular and then-- a conclusion that is supported by examination of the stories themselves. And then is used very densely in these stories, with some children using it to introduce virtually every clause after the initial one.

Compare, for example, the three stories, one by a four year old and two by five year olds, shown in example (5.1).

- 5.1.a (PA) Hippopotamus_, on a TOWEL. (PA) He jumped into river and, and he fell to the bottom. (PA) He splash it_, and it went up. And they yelled at him. (PA) He was sad. (PA) He was crying. He said he was sorry. They played catched in the WATER. (ME; 3;11)

- b MH: (PA) Once upon a time_, there was a dragon and he was at the beach. (PA) And that dragon wanted to go and swim. So then he_, JUMPED in the water. (PA) And then SPLASH he went in the water. (PA) Then he, he, he splashed on, and they're not, they're not happy. (PA) So after_, he was very sad, and he came back out. (PA) And after_, he wiped himself. (PA) Then after, and_, said, "Can you be friends with me after?" And then_, and then_, uh_, he, he, he wiped himself again.
I: (MU) Mhm.
MH: And then they ALL played ball in the WATER.
(MH; 5;2)

- c JF: Mm. Once upon a time there lived an old lunny rabbit.
I: Yeah.
JF: He HOPPED for a carrot_, and then fell down on his head.
I: Oh no! (LA)
JF: (LA) And then hopped away.
I: Mhm.
JF: Went to, went to the circus_, fell down onto the stage (LA). And then WALKED home_, eating 2000 carrots at the same TIME (LA).
I: Wow! (LA)
JF: And then_, then_, then_, he had PEAS ALL at the same time.
I: Wow!
JF: And then he ate his house. (LA)
(JF; 5;3)

Both ME's and MH's stories shown above were told in response to the same picture book; they are fairly typical examples of stories by older and younger children. The story by the five year old shows greater linguistic and textual sophistication than that of the younger child. In particular, note the very high rate of clauses with lexical conjunctions, and the frequency of then. And then is not used to head every clause, as is the case in some children's stories, but it is still frequent, as it is in the free story told by JF.

Comparison of the four and five year olds shows that the frequency of conjoined clauses among the older children is very similar to that found for adults; it is, in fact, slightly higher, but not markedly so. The four year olds, on the other hand, produce considerably fewer clauses headed by conjunctions than both five year olds and adults. Thus, as concerns this factor, it seems that we can posit an advance towards the adult pattern from four to five years.

To sum up the results obtained thus far, we have seen that children's stories, like adults', are characterized by the frequent use of conjunctions; in both groups we have found that approximately twice as many clauses in stories as in conversation are headed by one or more conjunctions. We have already had reason to notice that the children differ from the adults by reason of their very frequent use of then, which most often occurs as part of the combination and then. This difference will show up even more clearly in Table 5.9, which shows the semantic classes of conjunctions found in children's stories.

In this table, we can see immediately that almost 80% of the conjunctions used by the children as a group are temporal, with none of the other three classes showing up with any great frequency. What we seem to have is an exaggerated version of the adult pattern shown in Table 4.9; in both cases, temporals are the most frequently used class, next come additives and causals with almost equal frequencies (8.6% and 9.7% respectively for the children as

a group), and adversatives are used least frequently (only 2.2% in children's stories). The children, though, use temporal conjunctions so frequently that the other semantic classes are very rare in the data. This pattern is, of course, very different from the more balanced proportions of the semantic classes in the children's conversation. The results for conversation show that the children do, in fact, control the more balanced pattern-- sequential temporals are not the only conjunctions they are able to use-- and thus it is clear that they are choosing to use these temporals in their stories.

The sequential temporals, as expected, make up the majority of temporal conjunctions in both adults' and children's stories, but in the children's corpus they account for almost all (98%) of the temporals used. In fact, they make up almost 80% of the total conjunctions used. This is much higher not only than the frequency in their own conversation, but also than that in adults' stories.

In addition, the children as a group use 84% asymmetric and in stories; this contrasts with the mere 37.8% asymmetric and in their conversation. It is also higher than the approximately 60% asymmetric and used by adults in this text type.

With regard to this feature, there is no indication that the five year olds are using a more adult system than the four year olds, in the sense of using fewer temporal

conjunctions of all kinds, and fewer sequential temporals in particular. On the contrary, the preponderance of sequential temporal conjunctions is even higher among the five year olds, as shown by all the variables discussed above. The fives use 86.3% temporal conjunctions; sequential temporals make up 99.4% of all temporals, and asymmetric and makes up 88.3% of all occurrences. The five year olds thus seem to be relying even more than the four year olds on sequential temporals as a marker of narrative discourse. Why should this be?

My hypothesis is that children at this age are still formulating a concept of narrative as a text type characterized by temporal sequence. This concept is firmer in the minds of five year olds than four year olds, hence they use an even greater number of sequential temporal conjunctions to mark the all-important temporal links and differentiate narratives from other text types. Later, at an older age than the children in this study, the children will realize that other types of links are also important in narrative. The frequency of temporal conjunctions will decrease, as causals-- as well as additives and, to a lesser extent, adversatives-- increase. Thus, note that a glance at Tables 4.7 and 5.7 reveals that the next most frequent conjunctions in adults' stories after and are so and because; in children's stories, these two basic causals occur with minimal frequency compared to then. Then, as we have seen, is extremely frequent in children's stories,

particularly in the and then cluster. This is not so in adults' stories. On the other hand, other (i.e. non-sequential) temporal conjunctions, marking more sophisticated temporal links, are used by adults but occur very infrequently in children's stories. With their increased linguistic resources, the adults do not need to stress the element of sequentiality as the children do.

Next we shall examine the syntactic classes of conjunctions used in children's stories, shown in Table 5.10. The proportion of Class 4 conjunctions has risen sharply compared to the proportion in conversation (to 88.5% of the total for all children), with a concomitant drop in the frequencies of the other groups. This, as with the proportions of semantic classes, represents a more extreme pattern than that found in the adults' data (cf. Table 4.10). As we have seen before, the syntactic facts reflect the semantic facts. The high proportion of sequential temporals in children's narrative results in the high frequency of Class 4, the low frequencies of other temporals and of because result in the low frequency of Class 3, and so on. And again we see that this pattern is more marked among the five year olds, who use 92.7% Class 4 connectives, than among the four year olds.

Given that we find that the children use 95% Bs and only 5% Ps in narrative, it is clear that there is no more pressure towards subordination in narrative discourse among them than among the adults (cf. de Beaugrande, 1980). Among

both age groups, in fact, there is evidence of a trend away from subordination in narrative, but it appears that the underlying pressures are semantic rather than syntactic in nature (given that the proportion of non-conjoinable subordinate clauses remains constant among all text types).

We shall next compare the free and prompted story types in children's discourse, to see whether these types differ as they did for the adults. Tables 5.11 and 5.12 show the total frequency indices for conjunctions in children's free and prompted stories, respectively.

These tables reveal that, unlike the adults, the children use conjunctions more frequently in their prompted stories than their free stories; the index of 147.64 for prompted stories is considerably higher than the free stories' index of 110.39. This is the reverse of what was observed in the case of the adults' stories, where free stories were found to contain more conjunctions. We also find that the children use combinations more frequently in their prompted stories.

Tables 5.13 and 5.14 show the percentage of conjoinable clauses headed by a conjunction in the two story types. It can be seen that not only the gross frequency of conjunctions but also the frequency of conjoined clauses is higher in the prompted stories, comprising 62.2% of the conjoinable clauses, as compared to 50.8% in free stories. This again is different from the adults' data, which showed no real difference in the frequency of conjoined clauses in

the two story types. Clearly, the children are using the device of conjunction more frequently in prompted than in free stories, and this is not simply a result of a greater use of conjunction clusters.

Next we shall consider the semantic classes of conjunctions occurring in the two story types, as shown in Tables 5.15 and 5.16. Here again the data are different for the two story types, but this time the results seem more similar to those obtained from the adults. Temporal conjunctions are by far the most frequent class in both story types, but they are rather less frequent in the free stories (69.8% vs. 84.6%). All the other classes, led by the causals, are more frequent in that type (e.g. causals at 15.1% as opposed to 7% in prompted stories). Sequential temporals are less frequent in the free stories, and asymmetric and also makes up a smaller proportion of the total occurrences of and.

Again we see, however, that the five year olds do not appear to approach closer to the adult pattern than the four year olds; on the contrary, they show a greater reliance on sequential temporal conjunctions in both story types. Thus, if the hypothesis that the five year olds have a clearer idea of the requirements of narrative is correct, it would seem to apply equally to both the prompted and unprompted stories.

Why, though, should storytellers of any age show this observed tendency to use a greater proportion of temporal

(as opposed to causal) connectives in prompted stories than in free stories? At least in part, I believe, this can be accounted for by the hypothesis that the prompted stories contain a greater amount of descriptive discourse than the free stories (see Section 4.3.3). This is supported by the fact that these stories contain not only more temporal connectives but also more additives than the free stories. Scrutiny of the adults' stories reveals other linguistic indicators that lend support to this hypothesis, e.g. verbs in the present tense, and particularly in the progressive aspect, the occurrence of such visually oriented verbs as look (like) and seem, the exophoric use of pronouns, etc. Some of these features are seen in the excerpt in (5.2) (see also the children's examples in (5.1.a & b)):

- 5.2 After they've eaten, they decide to have a game of ball, and they're running around and_, having a great time_, and_, playing ball with the dragon. Everybody seems to be VERY happy. (PA) The prince throws the ball to the dragon, and the dragon catches it_, while he's running backwards, it seems. (AM; ad)

None of these features, of course, is unique to the prompted stories, but they do occur frequently in that discourse type. It will be remembered that both adults and children performed this task with the picture stimuli in front of them.

Consciously or unconsciously, then, the storytellers appear to have viewed the prompted and free story tasks as differing slightly in nature and calling for rather different linguistic output. The adults definitely produced

more sophisticated texts in the free story task, in the sense that both the perception and the encoding of causal links between events must be more sophisticated than the simple perception/encoding of temporal sequencing; the children showed the same tendency, although to a lesser extent. Remember also that both adults and children showed slight but noticeable tendencies to use more varied types of temporal conjunctions in the free stories. Interrelated with and stemming from these factors we have the syntactic fact that the Class 4 [-preposable, +phrasal] conjunctions, which presumably are less productive of syntactic complexity than the other classes (cf. Beaman, 1984), are less frequent in the free stories, and the other classes, therefore, are more so. In this sense, then, we have syntactic sophistication marching with semantic, especially in the adults' discourse.

Free stories appear to be more sophisticated texts than visually prompted stories, in the sense that they approach closer to the cultural ideal for stories. This is all the more interesting as both adults and children find the free story task the more difficult one (no doubt because of the greater stress it places on creativity and/or memory). That this is the case is manifested among the children by the frequent unwillingness or inability to even attempt to tell an unprompted story, let alone to produce one that fit our linguistic criteria of "storyhood" as defined at the beginning of this section. Note that the free story corpus

of the children is considerably smaller than the prompted story corpus (291 clauses, 1558 words as compared to 402 clauses, 2242 words). It is my contention that the greater ease of the prompted story task accounts for the greater use of conjunctions by the children in this type: with the pictures before them, they are able to actually see the sequence of events, and are thus prompted to encode it linguistically. (With the adults this effect operates differently; the "sequentiality prompt" does result in a greater frequency of sequential temporal conjunctions, but they do not use conjunctions as a class more frequently. It seems that their association of overt conjunctive marking with narrative is already so strong that it is only the type of linking that is affected by the visual prompt.) But it is important to remember that the presence of the pictures should also make the recognition of causal links easier for the children (and the adults) and thus might theoretically be expected to result in a higher frequency of causals in the prompted stories as well. This is manifestly not the case. It seems that the visual prompts serve only to remind the children of those links that they already associate with narrative discourse-- i.e. temporals-- but do not cause them to encode other links that they consider to be less appropriate there.

Unlike the children, the adults did not opt out of the free story task, but they frequently commented on its difficulty, their inability to tell "good stories", etc. It

is therefore intriguing to note that the adult free story corpus is larger than their prompted story corpus (1758 clauses, 10,564 words as compared to 1265 clauses, 8641 words). Once they had begun, some of the adults continued at considerable length. The prompted story task, on the other hand, was self-limiting; given a nine-picture sequence, even the most skilled storyteller can only find a limited amount to say. None of the children produced stories that could be considered long; they appeared unwilling or unable to continue a monadic discourse type for any length of time.

To return to the topic of the five year olds' stories: with regard to conjunction usage, this age group produced free and prompted stories that were more similar to each other than the stories told by either four year olds or adults. Why might this be? Earlier I formulated the hypothesis that the five year olds have developed the concept of narrative as a text type crucially, and indeed almost exclusively, characterized by temporal links. The four year olds, judging by the evidence of conjunction usage, do not appear to have such a conception, or at least, not as strongly so. It is possible, then, that for the five year olds the all-important requirement of encoding temporality overrides any differences between types of narrative texts; as far as this characteristic is concerned, prompted stories are no different from free. If anything, the presence of the visual stimuli, by making the task

easier, results in an even greater amount of temporal marking (as was discussed above). We have seen that the five year olds produce many more conjoined clauses in prompted stories than in free, more even than adults do in either type.

Perhaps a reasonable analogy for this behaviour is provided by children's overgeneralization of, for example, morphological rules; once a rule is formulated (e.g. that plural is marked on nouns by suffixation of -s), it is applied everywhere, even to items to which it is inapplicable in the adult grammar (resulting in forms like childs or foots). Similarly, one might hypothesize that the five year olds, having discovered the temporal basis of narrative-- a concept that the four year olds would appear not to have formalized as fully yet-- go overboard, marking temporal links to a degree unparalleled in adult discourse, and ignoring all other conjunctive relations. At a later stage, they will realize the importance of other types of relations-- especially causal-- in producing good stories.

5.1.4 Game Explanations

As the discussion in Section 4.3.4 made clear, the game explanation is a particularly difficult discourse type for adults, let alone for children. In fact, the corpus of children's game explanations is extremely small compared to the other discourse types studied here. Furthermore, the children typically did not produce successful game

explanations (in the sense discussed in Section 4.3.4); this is not surprising under the circumstances.

In Table 5.17 the total frequency indices for conjunctions in children's game explanations are shown. Disregarding the results for the three year olds (because of the small corpus), we find that the frequency of conjunctions as a word class is high in game explanations (index 115.29 for all children); it is, in fact, not greatly different from that found in narratives. This is similar to what was found in the adults' data. It is also to be noted that if (index 9.41) has a higher frequency in this text type than in any other. (Although, for some reason, there are no occurrences of if in the five year olds' discourse, regardless of text type; in this particular text type, it results in the five year olds' data being less similar to the adults' than the four year olds' are, as far as this feature is concerned, at any rate. But the fives do produce some conditionals with when, as in (5.3.b).)

Next, in Table 5.18, the percentage of clauses headed by a conjunction is shown for this text type. This table shows that the frequency of actual conjoined clauses is considerably lower in game explanations (48% of conjoinable clauses) than it is in narrative (almost 60%) for the children as a group. It is also easy to see that this difference stems from the performance of the four year olds, who produce relatively few clauses headed by conjunctions, i.e. only 37.5% of conjoinable clauses. The five year olds,

on the other hand, show quite a different pattern, with their percentage of conjoined clauses (68.2% of conjoinable clauses) being not very different from that found in their stories, nor from that produced by adults in their explanations. There is thus a very striking difference to be seen between the performances of four and five year olds at this task.

If this perceived age difference is well-founded, then it appears to indicate that the five year olds are producing explanations more similar to those of the adults than the fours are. Again we observe that they are using more conjunction combinations than adults do in the same discourse type, but the total frequency of conjoined clauses is very similar. The four year olds may be producing such a low proportion of conjoined clauses-- more similar to what is found in their conversations than their narratives-- because of the difficulty of this text type. Two possible explanations for their performance come to mind. One is that, faced with this difficult type of text, the four year olds attempt to model their production on their conversations; later we shall see some other evidence that appears to support this hypothesis. But it is also possible that the effort of constructing this type of text is so great that the fours are simply unable to devote much effort to making their explanations cohesive. Rather, they may resort to producing more immature texts than they would do in the case of other, more familiar types. If this is the

case, then it might be that the five year olds, equipped with greater linguistic sophistication, may simply be more capable of producing cohesive (if not coherent) texts, when faced with unfamiliar discourse types. But, as we shall see below, the facts may be somewhat more involved than that.

Example (5.3) contains two explanations, one by a four year old and one by a five year old. These examples were chosen because they are relatively coherent.

5.3.a I: Tell me how you play a game. And then when you tell me_, I'll play it [i.e. the tape] back to you.
PM: I_, I play with spaceships.
I: OK. How do you play with spaceships?
PM: I, I.
I: Tell me what you do.
PM: Build them with the Lego, and then I stand up and I_, walk with the spaceship. And, and they're_, going_, into_, space. (PM; 4;4).

b I: Do we play hockey_, or anything at home?
AJ: Well.
I: With your friends?
AJ: Yup, at Nxxxx's house, he plays hockey, except it's a, it's a toy hockey, and there's some things that go, "Pt, khtuh, tskh" [sound effects].
I: Oh, it's a game.
AJ: And, and when, and you know when you want_, catch the_, thing_, you got, you, you have to turn it.
I: Uhuh.
AJ: Turn it? (PA) And go "pht", and, and it goes to another guy. (AJ; 5;0)

In both these examples, we can see a tendency to focus on one particular moment of the game in question. Note, though, the presence of a simple conditional structure (with when not if) in the older child's explanation. This shows the beginnings of an approach to those more complex conditionals found in adults' explanations. We also note

that the explanations may require more prompting from the interviewer than narratives. This is also the case with the adult subjects; occasionally, questions were required to elicit a clarification of important points. Another indication of the difficulty of this discourse type is the frequency of stammered repetitions, indicating planning problems.

Table 5.19 shows the semantic classes of conjunctions used in children's game explanations. As this table shows, the proportions of the various semantic classes found in game explanations look different from those in any other text type examined. Temporal conjunctions are the most frequent class (making up 40.8% of the total for all children), but they are not nearly as frequent as in narratives. For the four year olds, in fact, not temporals (32%) but additives (40%) turn out to be the most frequent type used. Sequential temporals do not have the predominance they do in narrative, nor is asymmetric and as frequent. Indeed, most of these indices are quite similar to those obtained for conversation; this tendency is particularly striking in the discourse of the four year olds (which, it must be remembered, also shows that low proportion of conjoined clauses typical of conversation). The five year olds, though, show a semantic class pattern that almost seems to fall midway between those obtained for conversation and for stories; they use 57.1% temporal conjunctions, additives and adversatives are next most

frequent, and causals are rare (only 4.8%).

What the results obtained with this measure appear to show is that the four year olds, confronted with the task of constructing a difficult and fairly unfamiliar text type, attempt to structure it as they would their conversation (see Section 2.3). The high frequency of additive conjunctions-- higher than for conversation-- may highlight an attempt to deal with the task by "freezing" key moments of the game and describing them, thus producing a description of a state rather than a sequence. The five year olds, on the other hand, seem to be on the way to evolving an essentially adult strategy for dealing with the game explanation task, that is, treating it as a type of narrative text.

Finally, in Table 5.20 the syntactic classes of conjunctions used in game explanations are shown. For the children as a group, the relative proportions of the syntactic classes turn out to be not very different from those found in the adult corpus of explanations. In general, the results obtained are more similar to those obtained for conversation than to the results for narrative, unlike what is found in the adult data. This is, of course, to a great extent a reflection of the lower proportion of sequential temporal conjunctions, resulting in a lower frequency for Class 4 (69.4% of total). We also note the high frequency of Class 1 for the four year olds (16% of total), stemming from the frequency of if. For the children

as a group, we find 75.5% Bs and 24.5% Ps used in this text type. This is quite similar to the proportions used by adults in the explanations, unlike the situation found for stories.

The corpus of game explanations, as we have seen, is small; nevertheless, certain interesting tendencies have been observed. For the children, the attempt to construct this difficult discourse type results in texts that partake to some extent of the characteristics of both conversation and narrative, two text types familiar to them. They differ, though, in containing more conditionals than the other types. This is quite different from what was found in the case of adults, who construct their explanations primarily as narratives, except for those sections which are structured in the characteristic hierarchic fashion.

5.1.5 Discussion

In the preceding sections of this chapter we have examined the children's production of conjunctions in three text types. In this section, certain theoretical matters arising from the performance of both the children and the adults will be considered.

In particular, it will be appropriate to discuss the concepts of planned and unplanned discourse as they are formulated by Ochs (1979), and consider the relevance they may have to the material presented here. Ochs points out that the unplanned discourse of adults-- that is, "discourse

that lacks forethought and organizational preparation" (55)-- shares many features that are common to child discourse.<5> More specifically, she suggests that "when speakers have not planned the form of their discourse, they rely more heavily on morphosyntactic and discourse skills acquired in the first 3-4 years of life" (53). Planned discourse-- or "discourse that has been thought out and organized (designed) prior to its expression" (55)-- is characterized by the use of more complex structures. Ochs cites as examples such syntactic structures as cleft constructions and certain types of relative clauses, as well as discourse structures such as the extensive use of cohesive devices, linking phrases, and so on. Most discourse is either relatively planned or relatively unplanned rather than falling at one of the extremes of the planned/unplanned continuum.

The discourse collected in this study falls towards the unplanned end of the spectrum. As far as the children are concerned, one might argue that most, if not all, of the discourse of children this age (i.e. who fall exactly within Ochs's comparison group) is unplanned. Within the adults' discourse, the conversational portions were presumably the least planned (being, in fact, relatively unplannable), but even the monadic portions (i.e. stories and game explanations) offered the subjects little time for extensive pre-planning. Adults felt constrained by the interview situation not to spend more than a few minutes

planning their contributions<6>; several, in fact, commented that with more time they could have told "better stories". Children, on the other hand, told their stories either immediately or not at all; they showed little evidence of wanting time to consider. In this type of discourse situation, then, the adults' and children's discourse should be maximally similar. In a situation where considerable planning time was allowed-- e.g. if subjects had been presented with the picture books and told the nature of the task on one day, had been allowed to keep the books overnight, and had told their stories the next day-- then one would expect the adults' and children's discourse to be maximally dissimilar; this is assuming that children of the relevant age would not use the intervening time to plan their discourse, would not, in fact, be capable of doing so, and would not in any case use the structures characteristic of adults' planned discourse.

The adults in this study do indeed use many of the features that Ochs shows to be characteristic of child discourse and adult unplanned discourse. These include faulty pronoun reference (i.e. pronouns used in contexts where a full NP would be appropriate), the actual deletion of referents, left dislocations, the frequent use of demonstrative modifiers (e.g. this) instead of relative clauses, verbs in the present tense to refer to past tense events, and so on; see the examples in (5.2), and in (5.4) below, as well as the children's data in (5.1) and (5.3).

5.4.a So I, of course_, climbed up into the tree and_, started going out on the branches trying to_, get apples, etcetera. And_, went out on this branch that APPEARED to be COMPLETELY safe_, but_, it wasn't, it was_, DEAD. (MD; ad)

b So I_, I finally get to this little_, I dunno, PASTRY-store or whatever it was, and, um, I go in and these two Italian ladies are having this long conversation. (JG; ad)

Many of these characteristics have their roots in the fact that "in relatively unplanned discourse more than in planned discourse, speakers rely on the immediate context to express propositions" (62).

The characteristics of unplanned discourse that are of particular relevance to this study include a greater proportion of coordinate as opposed to subordinate structures, and a high frequency of implicit conjunction, i.e. conjunction without an overt connective, as in (5.7.a):

5.7.a I don't like that house. It looks strange.

b I don't like that house, because it looks strange.
(Ochs, 1979: 66)

Given this background, one might assume that the lower frequency of overt conjunctions in conversation as compared to stories might be a reflection of that discourse type's being less planned. But if that were the case then we would be unable to account for the higher frequency of coordinate conjunctions (assuming Bs, and in particular Class 4 conjunctions, to be coordinate conjunctions) in narratives. We appear to find each discourse type showing a greater degree of one particular characteristic of unplanned

discourse than the other.

What seems to be actually happening here is that both text types, as well as the game explanations, show the signs of unplanned discourse. The relative frequency of conjunctions in the different text types is, I believe, an actual text type marker; that is, frequent use of sentence connectives characterizes narrative discourse, which is the main component of narrative texts. But the high proportion of Class 4 conjunctions, i.e. in other words, of sequential temporals and particularly of and (both symmetric and asymmetric) is probably to a great extent a mark of unplanned discourse, rather than of a particular discourse type (cf. also Beaman, 1984).

Conversation is a text type that is not amenable to extensive pre-planning. The story and game explanation types, on the other hand, are. One would predict that adult speakers would use a greater variety of more semantically explicit temporal and causal connectives in planned narratives than in unplanned. There would be a lower frequency of the very "contentless" and, as well as of the relatively unspecific then and so, and a greater frequency of more semantically explicit conjunctions like before, after, because, though, etc. This is in fact what Beaman (1984) found: adverbial subordinate clauses are considerably more frequent in written than spoken narratives; and, then, and so are less frequent.<7> When adults have the opportunity to plan, they tend to mark

interclausal links with greater semantic precision than when they do not. One would speculate that the game explanations should be especially affected by planning, that adult speakers would be able to organize their expression of the interrelated conditional links, and that planned game explanations would be less likely than unplanned ones to take the form of a narrative text, and thus would probably contain a lower proportion of narrative discourse.

It is extremely unlikely that children of the age of those studied here would show this type of behaviour. Rather, they tend not to use the structures that are characteristic of adults' planned discourse at all. (This is, after all, the burden of Ochs's argument.) Therefore, the differences found in this study between adults' and children's discourse are the more significant in that they reflect differences between adults' and children's discourse at their most similar. The differences found must be purely a factor of age rather than of discourse situation. Likewise, the differences found between different text types reflect these types at their most similar, and thus can be considered to be fundamental.

And indeed, if one thing seems quite clearly to be the case for both the adult and child discourse studied here, it is that the differences between text types must in fact be textually based. By this I mean that they must be conditioned by text type, rather than by any other factors. Only textual considerations can account for not only the

different semantic classes of conjunctions but also the frequency of conjunctions found in each type. We have seen, for example, that the high frequency of conjunctions in (oral) stories is not based on pragmatic necessity; quite the contrary. Rather, the only explanation of this characteristic that makes sense is that it is conditioned by the need to encode interclausal links in a particular type of text.

Certain conjunctive links must be encoded overtly in order to avoid any misunderstanding which might result from leaving them implicit. It is quite probable that the frequency of overt links in conversation probably represents the base frequency, that needed to avoid pernicious misunderstanding; it is possible, though, that that base might be even lower. In conversation a variety of semantic links between clauses are expressed, both overtly and, presumably, implicitly. In stories and explanations, a number of connections are marked overtly that need not be, if this were only being done in order to be understood. As we have seen, in the case of narrative discourse there is an assumption that clausal links, whether overt or not, will tend to be of a sequential nature; thus, there is no pragmatic need to mark them overtly. But this is done nonetheless. It seems probable that this is because speakers know that these conjunctive links are defining markers of particular text types, and not because they feel that they will be misunderstood if they do not mark them.

Conjunction, in other words, is a cohesive device that is evidently favoured in narrative texts; it seems to be a less favoured device in conversation. Whether other cohesive devices operate in parallel fashion-- meaning that conversation tends to be less cohesive than narrative-- or whether, on the other hand, certain other devices will prove to be more favoured in conversation and less so in narrative texts, is an important question, but one that I will not address here.

5.2 Some Notes on the Question Sessions

5.2.1 Conjunction Usage

In this section we will consider the question sessions associated with the picture books, approaching the matter from two angles: 1) conjunction usage in the question sessions, as compared to other discourse types; and 2) the actual responses to the questions and what relevance they may have for this study, in particular as they reveal children's cognitive development.

First we shall examine the question sessions for the same indices of conjunction usage that were determined for the other discourse types. A structured question and answer session such as these were is unique in that the contributions of one interlocutor (the interviewer) constrain the contributions of the other interlocutor (the

test subject) to an unparalleled degree. In responding to questions of fact, that is, questions to which there are correct and incorrect answers (as opposed to questions of opinion), the question-answerer finds his discourse forced into certain channels (at least, if he wishes to answer appropriately, if not correctly). The form and the content of the answer depend to a great extent on the form and content of the question.

In other dyadic types of discourse, notably conversation, the nature of each utterance is constrained to a certain degree by the nature of the preceding one(s). But conversation differs from a question session in three main respects. First, in a true conversation both or all the participants exercise (in theory) equal control over the direction of the discourse, whereas in the question session, one person, the interviewer, exercises control over the discourse.

Second, the question session is not a globally coherent and cohesive discourse; rather, each question/answer set is an individual unit, taking the form shown in (5.6):

- 5.6 A: Question.
 B: Response.
 A: Evaluation of Response.<8>

A given question/answer unit need have only the most tenuous connection with those preceding or following it. This differs from conversation, in which any question/answer dyad is intimately linked to the surrounding discourse.

Finally, a question occurring during the course of conversation is generally a genuine request for information and may be answered in a variety of ways, each of which will cause the ensuing discourse to take a different course. A question asked in a question session is not intended to elicit information about the world but about the answerer's own knowledge of the world. The questioner expects a particular response or one of a limited set; and whatever the actual response is, it does not affect the following discourse, the course of which is already predetermined. What questions the interviewer will ask does not depend on what the subject answers to earlier ones.

As regards the particular effect that the above considerations may have on conjunction usage, we must consider the nature of the questions asked in this study. (The questions themselves are given in Appendix B.) Most of them-- 17 out of 27, to be precise-- are questions about the causal relationships between events in the stories. Many of these questions begin with the WH-word why; as was mentioned above (Fn. 2), why in a question tends to elicit because in the answer. This is not, of course, an invariant cause and effect relationship (although among some of the children the why/because link seems almost to be a conditioned reflex). Thus a question like (5.7.a) can elicit answers in a number of forms.

- 5.7.a Why did the prince, princess and dragon go to the country?
- b 'Cause they want to have a picnic. (NK; 5;0)
 - c So they could camp. (AJ; 5;0)
 - d They wanted to have a picnic. (EB; 4;0)
 - e To have a picnic. (SR; ad)

As the successful answers in (5.7.b-e) show, the answer to a causally oriented question need not begin with because or indeed with any conjunction, causal or otherwise, since the causal relationship is already implicit in the sequence. Nevertheless, as we shall see, the high number of causally oriented questions results in a pattern of conjunction usage not seen elsewhere; in fact, it might be considered anomalous.

Tables 5.21 and 5.22 give the frequency per 1000 words of conjunctions in adults' and children's question sessions, respectively. First of all, we see that because is indeed the most widely used conjunction in both adults' and children's answers. It is clearly far more frequent in the children's discourse (index 66.46), accounting for 73.8% of the total; among the adults, it accounts for 47.7% of the total conjunctions (index 28.21). Let us note here that, inasmuch as connectives used clausally even in clause fragments are counted here, the child data include those instances where because constituted the entire response to a question, as in (5.8).

- 5.8 Q: Why did the prince, the princess and the dragon go to the country?
- A: Because. (PMa; 3;5)

The relative frequency of this response strategy among the children and its complete nonexistence among the adults accounts to a great extent for the difference in frequency of because.

We also note that conjunctions as a class are fairly frequent in the question sessions for both age groups, in both cases falling in frequency midway between conversation and stories (index 59.12 for adults, 90.05 for children). The frequency is, in fact, markedly different than in either of those two discourse types. This would appear to indicate that the prompting effect of the interviewer's questions results to some degree in the stimulation of conjunction usage, but is nevertheless not as strong as the tendency to mark links within narratives (where the links are made within one's own discourse).

Further consideration of the questions sketched in here must await the examination of the frequency of conjoined clauses, as shown in Tables 5.23 and 5.24. Here again we perceive that the question sessions fall between conversation and stories with respect to conjunction frequency. The frequency of conjoined clauses as a proportion of conjoinable clauses (41.7% for adults, 40.3% for children) is different from either other discourse type.

The age factor is found not to have any obvious impact upon the frequency of conjoined clauses in this type. None of the age groups within the child population differs greatly from any other with regard to this index, nor do any

of the groups differ markedly from the adult population.

This is interesting for more than one reason. First, it provides some confirmation of the hypothesis mooted above, i.e. that the higher frequency of conjunctions as a class, and especially of because, in children's answers stems from their use of what one might call the "solo because strategy". When one compares the actual ratios of conjoined clauses in the adult and child data, they are found not to differ much.

The second interesting point is that this is one discourse type in which the children perform at the adult level (with regard to this particular aspect of conjunction usage, at any rate). It seems quite reasonable to suppose that the prompting effect of the questions does in fact cause the children to structure their responses according to the adult pattern. A slight variant of this hypothesis would be to assume that the adults produce relatively unsophisticated structures in their answers to questions, thus approximating the children's capacity. For our purposes, it does not matter whether the children are being given a boost or the adults are operating at less than peak capacity in this situation. What does matter is that the questions stimulate the production of similar structures in adults and children.

Next we shall examine the frequency of the semantic classes of conjunctions in the question sessions. Tables 5.25 and 5.26 show these frequencies for adults and children

respectively. As was to be expected, causal conjunctions are the most frequent here for both adults (55.6%) and children (76%), occurring more frequently than in any other text type. Causals are more frequent in the children's discourse than the adults', reflecting the because effect discussed above. Remember also that the adults use more different conjunctions than the children (as is the case in all text types, of course). Note that with age, there is a tendency for the children's use of causals to decline (from 85.7% for the threes to 69% for the fives), resulting in a more adult pattern. The five year olds' pattern of semantic classes is very similar to that of the adults.

Note that among the children the proportion of sequential temporal conjunctions rises with age (from 66.7% of temporals for the threes to 100% for the fives), although this does not seem to represent a move closer to the adult pattern. This may be another reflection of that increased reliance on sequential temporals that is so prominent in stories, although it is not possible to be certain of this.

Finally, the comparative proportions of the syntactic classes of conjunctions in this discourse type are shown in Tables 5.27 and 5.28. These tables reveal that the prevalence of causal conjunctions, i.e. of because, has resulted in a pattern of syntactic classes that is unique, in that this is the only discourse type in which Class 4 conjunctions do not predominate. They comprise only 36.6% of the total for adults, 22.3% for children. Instead, Class

3 [+preposable, -phrasal] is the most frequent, making up 56.2% of the total for adults, 75.6% for children. This is a pattern of syntactic class frequency not found elsewhere.

In adults' question sessions we find, then, that the total percentage of Ps rises to 57.5% of all conjunctions, with Bs only 42.5%. In the children's discourse this pattern is even stronger (as a result of the "because strategy") with 75.6% of all conjunctions being Ps and only 24.5% being Bs. This prevalence of subordinate conjunctions is unique to the question sessions and clearly results from the hyperfrequency of the single conjunction because.

The syntactic and semantic information just discussed adds further weight to the thesis maintained in this section concerning the programming effect of an interviewer's questions on the subjects' discourse and how this is revealed in the specific device of conjunction. As was to be expected, the orientation of the questions governs to a large degree the type of conjunctions that the speaker uses. The question-asker guides the flow of discourse to an unparalleled degree, a point that we shall return to.

We also note that the structuring effect of the questions results in the younger children in particular revealing their ability to use linguistic structures-- i.e. causal markers, adverbial subordinate structures-- that they do not use in the more spontaneous discourse types. At all age groups, adult and child, we find a greater prevalence of these structures in question answers than one might consider

natural, given their relatively low frequency in the other discourse types. Nevertheless, the question sessions do reveal that the younger children, especially, control more sophisticated syntactic and semantic structures than they commonly use. (This phenomenon-- i.e. the attainment of a greater degree of linguistic sophistication than is commonly manifested in speech-- is, of course, common to all age groups.) But it must be reiterated that it is highly unlikely that the data examined in this section has anything to say about the use of conjunctions in spontaneous discourse by either adults or children, given that the question session is an artificial, even unnatural, type of discourse. It is not usual in a dyadic discourse form for one speaker to exercise complete control over the direction the discourse takes. The posing by one speaker of a preplanned, invariant set of questions, to which the other speaker is (for whatever reason) constrained to reply, is an artificial type of discourse, even when conducted informally, as in these interview sessions. As far as planning goes, one might compare it to a monadic form like the planned lecture or monologue. Even though the question-answerer himself has little time in which to plan his response, there is a very real sense in which the interviewer has done considerable planning for him. The form of the question constrains the form of the answer. Where this section has been of interest, I believe, is in showing just how this constraint shows up not only in the

content of the response but also in its linguistic form. This is particularly relevant in the case of the three year olds, who here reveal competence over syntactic structures that they rarely use in more natural types of discourse.

5.2.2 Content of Answers

In this section, I will examine the actual content of the children's answers to the questions, as opposed to their linguistic form, and consider what this may reveal about the underlying reasons for certain aspects of the children's discourse.

In particular, we will consider the question of why the children mark causality-- at least by means of causal conjunctions-- so much less frequently than the adults (other than in the question sessions themselves, of course). In more informal terms, why do the children use then and the adults use so?

One hypothesis is that the children lack the linguistic capacity to express causality. In the preceding section, however, we saw that even the three year olds master the relevant structures; that is, they can produce clauses headed by causal connectives, when constrained to do so.

Another hypothesis is that the children lack the cognitive capacity to grasp causal relationships and therefore do not mark them. At first, this hypothesis also appears to be confuted by the results discussed above. But in fact this is not necessarily the case. It is possible

that the children are able, when pressed (as they are in the question sessions), to encode causality linguistically, but still do not fully grasp the actual concept (see discussion in Section 3.4.1). To find out whether this is the case, it is necessary to know whether they can answer the questions correctly (or at least plausibly). If not, then they may be responding in the question sessions to linguistic pressures which have no bearing on their actual cognitive ability; that is, they may have grasped the linguistic why/because link without really understanding the basis of it.

To determine whether this might be the case, the answers to the questions about each story were scored according to the system shown in (5.9).

5.9 Evaluation of Answers

1. Expected answer
2. Other appropriate answer
3. Inappropriate answer
4. Don't know
5. No response

Thus, if a subject gave a given question the answer (or one of the answers) predicted by the Text Acquisition Project, it was scored 1. If the answer was not expected but corresponded to the facts, as depicted in the picture book, it was scored 2. An answer that did not correspond to the events in the pictures was given a 3. A "Don't Know" response received a 4 and silence was scored 5. Thus, 1 and 2 represent appropriate answers, 3, 4, and 5 inappropriate answers. If a subject made several attempts at answering a

question, his most appropriate answer was scored.

In addition, each question was evaluated for category, as indicated in (5.10).

- 5.10.a Factual (F)
 - e.g. When the prince, princess and dragon were by the pool, what did the dragon go to look for?
- b Temporal (T)
 - e.g. The dragon was looking at the presents; what happened next?
- c Causal (C)
 - i.a External (E)
 - b Internal (I)
 - ii.a Purposive (P)
 - b Non-purposive (N)
 - e.g. (C/I/N) Why did everyone laugh at the dragon?
 - (C/E/P) How did the tree get back up?

What are called Factual questions here (for want of a better term) serve simply to indicate the subject's comprehension of what is going on in certain pictures; there are only four of them in the entire set. There are six Temporal questions; these serve to show whether a subject has correctly grasped the ordering of events in the pictures. The remaining questions are intended to investigate the subject's comprehension of various types of Causal relations; these are subdivided according to the External/Internal and Purposive/Non-purposive variables. Internal causals are deemed to involve the actions of some conscious agent, whereas External causals involve natural causes. The Purposive/Non-purposive distinction refers to whether an event was brought about intentionally or by accident or chance. Thus the first Causal example in (5.10)

is I/N because laughing is a human action but it is not (strictly speaking) intentional. The second question is considered to be E/P because (as it is phrased) it does not necessarily refer to human action; nevertheless, it is purposive, because the tree does not get put up by chance. It was felt that the various types of causality might have different degrees of difficulty for the children.

Table 5.29 shows the proportions of appropriate (1 and 2) to inappropriate (3, 4, and 5) answers to each of the major question types-- F, T and C-- as well as for all questions, for each age group. The responses are represented as follows: appropriate/inappropriate.

Table 5.29

Proportions of Appropriate to Inappropriate
Answers to All Question Types

	<u>All Ch.</u>	<u>3s</u>	<u>4s</u>	<u>5s</u>	<u>Adults</u>
F -- 4Q					
N	43/11	9/3	23/6	11/2	27/1
%	79.6/20.4	75/25	79.3/20.7	84.6/15.4	96.4/3.6
T -- 6Q					
N	73/13	14/6	39/6	20/1	42/0
%	84.9/15.1	70/30	86.7/13.3	95.2/4.8	100/0
C -- 17Q					
N	161/70	32/32	76/27	53/11	115/4
%	69.7/30.3	50/50	73.8/26.2	82.8/17.2	96.6/3.4
Total -- 27Q					
N	277/94	55/41	138/39	84/14	184/5
%	74.7/25.3	57.3/42.7	78/22	85.7/17.4	97.4/2.7

As was expected, the adults have little difficulty with the questions, totalling only five inappropriate responses (i.e. 2.7%) out of a total of 189. The children as a group achieve approximately 75% appropriate responses. They improve noticeably with age.

As to the types of questions, the temporal questions are the easiest (if easiness can be deemed to be reflected in a high proportion of appropriate responses) for the fours, fives, and adults; the factual questions seem slightly easier for the three year olds.<9> The causal questions are the most difficult for all subjects, but particularly for the three year olds, who produce only 50% appropriate answers. It begins to appear as though for the three year olds, though probably not for the older age groups, a lack of causal connectives in stories might indeed have a cognitive basis.

Next we shall examine the responses to the different types of causal questions, as shown in Table 5.30. First the results for each question type are shown; then the individual variables E versus I and P vs N are considered.

Table 5.30

Proportions of Appropriate to Inappropriate
Responses to Causal Questions

	<u>All Ch.</u>	<u>3s</u>	<u>4s</u>	<u>5s</u>	<u>Adults</u>
E/P -- 1Q					
N	14/2	3/2	5/0	6/0	7/0
%	87.5/12.5	60/40	100/0	100/0	100/0
E/N -- 4Q					
N	38/17	6/7	23/7	9/3	28/0
%	69.1/30.9	46.2/53.9	76.7/23.3	75/25	100/0
I/P -- 6Q					
N	53/23	14/10	17/11	22/2	41/1
%	69.7/30.3	58.3/41.7	60.7/39.3	91.7/8.3	97.6/2.4
I/N -- 6Q					
N	56/28	9/13	31/9	16/6	39/3
%	66.7/33.3	40.9/59.1	77.5/22.5	72.7/27.3	92.9/7.1
E -- 5Q					
N	52/19	9/9	28/7	15/3	35/0
%	73.2/26.8	50/50	80/20	83.3/16.7	100/0
I -- 12Q					
N	109/51	23/23	48/20	38/8	80/4
%	68.1/31.9	50/50	70.6/29.4	82.6/17.4	95.2/4.8
P -- 7Q					
N	67/25	17/12	22/11	28/2	48/1
%	72.8/27.2	58.6/41.4	66.7/33.3	93.3/6.7	98/2
N -- 10Q					
N	94/45	15/20	54/16	25/9	67/3
%	67.6/32.4	42.9/57.1	77.1/22.9	73.5/26.5	95.7/4.3

Considering the individual question types first, one sees that all groups perform best at the E/P type (of which there is admittedly only one example). All groups except the fours perform worst at the I/N type. In more colloquial terms, it seems that all the groups have trouble understanding the reasons for the thoughts and emotions of human (or humanlike) beings.

Examining the individual variables, one then finds that all groups appear to find Internal causation more difficult than External, if only marginally, and (except for the fours) Non-purposive more difficult than Purposive. The three year olds, who do badly at all causally oriented questions, seem to have special difficulty with the concept of Non-purposive causation, i.e. with the idea that things may happen without someone wanting them to. They perform at worse than chance levels on this type (see row N in Table 5.30). This attribute is quite noticeable when one examines the children's answers to the questions; one notes that they often consider actions to be intentional which adults would consider to be accidental, as in (5.11).

- 5.11.a Q: Why did the tree fall down?
A: Why? (PA) 'Cause push it down. (MY; 3;1)
- b Q: When the dragon found_, his ball_, what did he do next?
A: He jumped into the pool. (SK; 4;10) .
- c Q: Why did the dragon go into the room alone?
A: (PA) He wanted to break the tree. (PMc; 5;2)

Even at five years of age, the children occasionally ascribe

intentionality to unintentional actions. This is not something the adults do; for the adult subjects, it was always clear that the dragon's knocking the tree down and falling into the pool (in Stories 1 and 3, respectively) are accidents.<10>

On the other hand, children's inappropriate responses to Purposive questions do resemble the adults', in that both groups tend to choose the Don't Know option here. The children do not subtract intentionality from an action, that is, they do not assume intentional actions to have been accidental; neither do the adults, of course.

To summarize the contents of this section, we have seen that causally oriented questions are the most difficult for all age groups, and they are particularly difficult for the three year olds. Subjects of all ages occasionally have difficulty recognizing the reasons for people's intellectual and emotional reactions (e.g. how people know things, why they get angry or laugh, etc.). The children exhibit the additional characteristic of attributing intentionality to unintentional actions (e.g. referring to pushing instead of knocking, jumping instead of falling).

Can one assume that the marked lack of causal connectives in children's stories reflects a lack of understanding of the concept of causality? In the case of the three year olds, one does, in fact, see signs of definite trouble with causal relationships. The older children, though, do much better at the causal

questions.<11> Nevertheless, they too show a marked lack of causal connectives in their stories. The adults' prompted stories are also low in causal conjunctions (possibly because of a high proportion of descriptive discourse, as was discussed above); their free stories, though, show considerably more causal linking. This is not as markedly the case with the children, although there is some evidence of the phenomenon.

Taking the children as a group-- as we can reasonably do since the low causal tendency is evident at all ages-- I believe that one cannot argue convincingly that they do not have the concept of causality; the 75-80% appropriate responses of the four and five year olds militates against this, despite the poor results of the threes. Remember, too, that the five year olds show even more marked temporal dominance than the younger children, and they clearly have a good mastery of causal relations. As we saw in Section 5.2.1, one cannot support any claim that they have not mastered the syntactic means of encoding causality, either; even the three year olds can do this, within the structuring context of the question sessions, if not elsewhere.

Thus, I believe that the results discussed in Section 5.2 support my hypothesis that the children are using conjunctions as a sort of text type marker and that they feel that the most important characteristic of narrative is temporal linking. It appears that they feel that encoding causality in narrative discourse is not necessary, and

possibly not even appropriate. They appear at least by age four-- the data for the three year olds are inconclusive-- to have a concept of different types of texts as being marked by different types of linguistic devices. In some cases they use such devices differently than adults do in the same text types; nevertheless, it seems clear that they have attained a certain level of textual sophistication.

Notes to Chapter V

1. Note that these conjunctions are all (more or less) synonyms of more frequent ones: unless corresponds to if...not, either is an optional companion of or, and yet and whereas are approximately synonymous with but (see Section 3.2). Likewise, once and since correspond to the more frequent when, after, and because.
2. The notably high frequency of because in the children's discourse is a function of its frequency in the question sessions, which make up a considerable portion of the corpus. Many of the questions (as we shall see) are causally oriented and start with why. Even young children know that the answer to why? is because; in fact, because may constitute the entire answer to a question.
3. The two year olds, as has been mentioned before, produce little discourse and virtually no conjunctions; hence, their results will not be considered in the following sections.
4. Fluctuations are observable in the data that will be presented. It seems probable that these are a function of the very small samples obtained for certain discourse types at certain ages. Note that comparison of the results obtained for the entire group of children in each discourse type show fairly small differences, i.e. 85-90% conjoinable clauses, 10-15%

nonconjoinable.

5. Ochs is careful to stress that the observed similarities between child discourse and adult unplanned discourse may only hold true within white, middle-class, (North) American culture. As the majority of the subjects in this study do come from that cultural group, one can safely apply her findings here.
6. Note that this is an internally operating constraint; as the interviewer, I stressed that the subjects might take as long as they liked to consider their stories. But adults, especially students, in our culture feel extremely uncomfortable remaining silent for long in the presence of a waiting interlocutor, not to mention a running tape-recorder. Children, of course, are far less subject to this constraint.
7. Beaman stresses the unplanned nature of both the spoken and written discourse in her sample. But written discourse, even relatively unplanned, nevertheless permits and encourages more planning than spoken discourse.
8. This structure for the question/answer set is fairly well established (cf. Stubbs, 1983: 29).
9. Among the factual questions, there was one particularly difficult one (Story 3, Q. 1), which depressed performance on this type. Otherwise, it seems reasonable to assume that all age groups would have

done more or less equally well at the factual and temporal types.

In general, the relative easiness of different question types is manifested as tendencies, without statistical significance. For the adults, not surprisingly, no question type is much easier than any other. For the children, the temporal questions are found to be the easiest, and the causal ones by far the most difficult.

10. Adults had a certain amount of difficulty with some of the questions, as revealed by their own comments and by lower performance on some questions. Their difficulty never took the form of mis-ascribing intentionality, though.
11. Two of the three year olds failed to answer any causal questions in their set appropriately; of the two, one had told the relevant story and one had not. Interestingly, there were two children who failed to answer any temporal questions appropriately, and both of them were four years old. But in both cases, the children were dealing with the set for Story 2, in which there is only one temporal question; if the child for some reason fails to answer that one correctly, then he has no chance to redeem himself as far as temporal questions go. It seems probable that these two cases are accidental failures, more particularly since both children had produced appropriate answers to

causal questions. In fact, one of the two had told the relevant story (marking temporal links), and had also been given another story plus question session, in which she answered temporal as well as causal questions appropriately. No child in the sample failed completely at the question task, that is, all answered at least one question appropriately. In addition, there is no question that was answered inappropriately by all the children who were asked it; one question (Story 3, Q. 9, Factual) was answered appropriately by all the children asked.

CHAPTER VI

CONCLUSION

6.1 General Remarks

In the preceding chapters of this thesis I have presented some data concerning young children's use of language within a textual framework. Different text types are characterized by a number of features, not all of them linguistic. As we saw in Chapter I, there is little doubt that text is an entity that is not characterizable in purely linguistic terms. Thus, it is natural that types of texts are likewise not definable by means of purely linguistic criteria. As de Beaugrande (1980; 197) puts it, a text type can be defined with reference to four kinds of elements: "(1) the surface text; (2) the textual world; (3) stored knowledge patterns; and (4) a situation of occurrence." Only item (1), the surface text, is relevant to the study of cohesion.

In this thesis, though, we have been concerned with one aspect of the cohesive structure of texts, namely conjunction. All cohesive devices serve to bind together the linguistic elements-- including the individual sentences-- of a text (cf. Halliday & Hasan, 1976). When conjunctions (both clausal and phrasal) occur in a text, then, they are explicitly serving this function. This is something that has long been known; the name of this class

of words is, after all, derived from the Latin conjungere 'to join together, connect, unite'. In fact, the use of conjunctions has probably been recognized as a cohesive device-- e.g. in studies of rhetoric-- long before the notion of cohesion was explicitly formulated (cf. Warner, 1985; 186-187).

In addition, a certain amount of research has been done concerning the use of particular conjunctions in particular text types (see discussion in Section 3.3; also Labov (1972), Beaman (1984), etc.). Different text types are characterized by the frequent use of different types of conjunctions; descriptive texts, for example, are characterized by additive conjunctions and narrative texts by temporal conjunctions. This is a surface reflection of the fact that these text types tend to be constructed in order to express different underlying links between events or objects.

The research presented in Chapters IV and V indicates that it is not only with respect to the type of conjunction used that text types can differ. They also differ with regard to the frequency of conjunction usage. Conjunctions are used considerably more frequently in narrative texts (stories and game explanations, in this study) than in conversations. This was a finding that had not been predicted on the basis of previous reports in the literature.

The high frequency of conjunctions in narrative texts

as compared to conversation seems at first glance to be highly paradoxical. After all, conversation does not have a circumscribed topic or range of topics; in fact, during a single conversation the topic can change numerous times. And the semantic link between any topic-- and, by extension, any utterance-- and the following one can be of any nature. This is reflected linguistically in the comparatively even distribution of the four major semantic classes of conjunctions in this text type. All types of semantic links can be made within a conversation, both implicitly (i.e. without an overt connective) and explicitly. Causal linkages are expressed more frequently than any other, but the other three classes occur with more or less equal frequency.

In (adults') narratives, though, we find not only that temporal conjunctions become the dominant class (as was predicted) but that approximately twice as many conjoinable clauses are headed by a conjunction as is the case in conversation. The paradox lies in the circumstance that narrative is defined with reference to temporal sequence: narrative discourse is discourse that is about events following each other in time; usually, but not necessarily, with some kind of causal relationship obtaining between certain of these events. Thus, other things being equal, the recipient of a narrative text will expect the semantic links therein-- whether explicit or implicit-- to be temporal. Furthermore, in oral narrative texts events are

overwhelmingly frequently related in chronological order, where this is not the case, it is because of forgetfulness or lack of organization on the part of the teller, and not because of any striving for flashback or flashforward effects.

Logically speaking, therefore, there should be no need for the plethora of conjunctions found in these texts; pragmatic factors should force the correct interpretation of implicit conjunctions. Whereas in conversation, with its multitude of possible semantic relations, one would expect explicit encoding of linkage types to be necessary. As we have seen, though, the actual situation is contrary to the expected one.

How can this circumstance be accounted for? In Section 4.3.3 the possibility that the phenomenon has its roots in the dyadic/monadic distinction-- i.e. that speakers feel a greater need to make their own discourse cohesive than to establish cohesion with another speaker's discourse-- was considered and rejected. For one thing, a conversation must necessarily fail if both (or all) speakers do not try to make it into one cohesive entity. If each speaker concentrates only on his own contribution while ignoring the other speaker's speech, the end result will be not a conversation but two monologues.

Another point against this hypothesis is that it is possible for a dyadic text type to be characterized by greater use of conjunctions than conversation is, as the

examination of the question sessions shows. These question sessions are comprised of quintessentially dyadic interchanges: question and answer duos. Yet conjunctions are found to be considerably more frequent in these sessions than in conversation. It is true that the question session is a highly artificial text type, but these results do provide some evidence against the view that conjunction use is disfavoured in dyadic text types.

Another possible explanation of the difference between conversation and stories is based on the differences in the assumptions of shared knowledge that underlie the two text types. While conducting a conversation, both (or all) speakers are considered to have access to all the knowledge they share between them; reference may be made to any object or event known to the speakers and/or present in the environment without any need for a detailed characterization or description. Whereas it is necessary in narrative to create a storyworld that is completely separate from the discourse context and about which few a priori assumptions can be made; everything must be specified, and the hearer is assumed to have virtually no knowledge about this world (Butters, 1984; Gopnik, 1986). Ideally, this should be so even in the case of the prompted stories, where it is clear that both speaker and hearer are familiar with the story matter. Hence, the argument might go, there is no need for explicit conjunctions in conversation because all speakers have a base of common knowledge, whereas in a narrative

everything must be made explicit, including conjunctive links.

Against this hypothesis, I would argue that, in the case of conversations one simply cannot assume-- despite the large stock of shared knowledge-- that the whole conversation will be about entities or courses of events familiar to all speakers. If the whole conversation concerned familiar matters, it would be uninteresting for all participants. It is true that such shared knowledge as there is may be presupposed by the speakers. It is also true that a certain proportion of conversation is phatic, i.e. is intended not to exchange information but simply to keep the channels of communication open. But most conversation is about subjects the speakers believe (rightly or wrongly) will be useful and/or interesting to their interlocutors. For this to be the case, a certain proportion of information that is unknown to at least one participant will be brought into play. As a result, conjunctive links will be made whose nature cannot be foreseen and which therefore ought in theory to be made explicit. These links, as has been stressed, may be of any semantic type.

In narrative texts, on the other hand, although the hearer is assumed to share little of the knowledge that the speaker has access to, one thing he does know is what a narrative is. (Were this not the case, he could not be a successful text recipient; among other things, he would

(probably try to impose a conversational turn-taking structure on the discourse situation, rather than realizing that a narrative is monadic.) One of the things he knows about narrative texts is that they are about temporally sequenced events; as this thesis has shown, that is learned by age four or five. Thus, the speaker ought not to need to make explicit the temporal nature of the links between events and hence between utterances; that should be a given, if nothing else is. For these reasons, then, the shared knowledge hypothesis cannot account for this particular difference between conversation and stories.

Consider in this context the difference between the prompted and free stories, in the data of both adults and children. For both groups, the prompted stories contain a lower proportion of causal conjunctions than the free stories. Based on the shared knowledge hypothesis, one might argue that the speaker feels that there is simply less need to encode causal links overtly in the prompted stories, as he knows that the hearer is also aware of them; indeed, the picture book is open before them both. But one must not forget that the prompted stories also contain a higher proportion of temporal conjunctions than the free ones. If the presence of overt conjunctions were simply a function of a lack of shared knowledge, then the temporal conjunctions would be just as dispensable as the causals: these links too are obvious to both speaker and hearer. If the hypothesis were valid, all conjunctions should be less

frequent in the prompted stories. This is clearly not the case. Nor can the shared knowledge hypothesis account for the difference between narratives in general and conversation.

What probably does account for the frequency of conjunctions in narratives is precisely the factor that one might have expected would act in the opposite direction: the crucially temporal nature of narrative. Speakers appear to feel that it is important to encode the temporal (and, to a lesser extent, causal) relationships obtaining between the events described in a story. Given that it is necessary to do this, speakers find that conjunctions provide compact and explicit lexicalizations of particular interclausal relations. By using a conjunction as a linking device, one can ensure both that one's intended meaning is clearly communicated and that this is done with a minimum of effort (Meyer, 1975). For this reason, these words are frequent in a text type in which the explicit encoding of certain interclausal relations is perceived to be a priority.

I am claiming, then, that it is not so much that conjunctions are less frequent in conversation as that they are more frequent in stories. Conversation quite probably illustrates the basic frequency of overt conjunctive links: about 30% of the conjoinable clauses are headed by an overt conjunction. The remainder are joined implicitly, and this despite the variety of possible link types. In stories the number of overt conjunctive links is increased because

narrators feel that these linkages are textually important and not because they are necessary for comprehension.

It is important to stress that this phenomenon cannot be explained without reference to the concept of text type: none of the semantic or pragmatic factors that we have considered, let alone syntactic factors, can account for it. Only by assuming that speakers have a linguistic concept of text type can one account for it in any principled fashion.

Hitherto I have concentrated on the use of conjunctions in conversation and stories. But what of the third text type examined, the game explanations? This is a difficult text type, which would, ideally, have a highly organized, hierarchical structure outlining many alternate courses of action along with their consequences (see Section 4.3.4). Most of the explanations collected show this conditional hierarchical structure only sporadically. Rather, the text producers tend to use a strategy that is found to be common in difficult situations: they use an easier text type, in this case narrative, as a model. Thus, the frequency of conjoined clauses in explanations is not significantly different from that in stories; this is only one indication that the explanations contain a high proportion of narrative discourse. Temporal conjunctions are also very frequent in this text type, as in stories.

But the explanations also contain a uniquely high proportion of conditional structures, manifested by the high frequency of the conditional conjunction, if. This reflects

the fact that at least some speakers do produce hierarchical conditional sequences in their explanations, although they never structure the entire text in this way. Thus, text producers appear to be aware that this type of structure is appropriate in the explanation of a series of contingent rules, but without considerable planning time, they are unable to construct them at any length; these structures are simply too complex for unplanned discourse. Thus, practically speaking, oral explanations of this type contain a high proportion of narrative discourse, but with occasional conditional contingent structures distinguishing them (for many speakers) from stories.

While the frequency of conjunctions as a group is greater in narrative than in conversation, the frequency of subordinate conjunctions (or prepositions, in contrast to coordinate conjunctions, which are "true" conjunctions, cf. Emonds (1985), Munn (1987)) decreases in this text type. In fact, they are only about half as frequent, in relation to coordinate conjunctions, as in conversation. Thus de Beaugrande's (1980; 197) prediction that "the surface text will reflect a... density of subordinative dependencies" in narrative discourse is not borne out. The frequency of non-conjoinable subordinate clauses (see Section 4.2) remains stable across all text types; the frequency of conjoinable (i.e. adverbial) subordinates decreases in narrative. The end result is that narrative texts are found to contain fewer subordinate structures than do

conversations.

This would seem to support Labov's (1972) claim that narrative discourse is characterized by syntactic simplicity as compared to conversation. Indeed, the use of subordinate structures is one of the features he declares not to be characteristic of narratives, except in the evaluative sections.<1> Certainly, it is the case that subordinate structures are generally considered more complex than coordinate structures (Beaman, 1984). Nevertheless, it appears unlikely that the increased predominance of coordinate structures in stories stems from a drive towards syntactic simplicity. Rather, it is in large part, if not entirely, determined by semantic factors.

The encoding of temporal sequence is, as we have seen repeatedly, essential in a narrative text. Those conjunctions that may most easily be used to encode this relation are the sequential temporals then and asymmetric and, as well as the combination and then. These conjunctions are associated with the relating of events in actual chronological order, which is preferred in narrative. In some sense, they are unmarked, as compared with the subordinate temporal markers, which are typically used when certain presuppositions are involved (Clark, 1973). Both these conjunctions happen to be Bs, i.e. coordinate conjunctions. Thus, in a text type in which sequentiality must be encoded, coordinate conjunctions will be frequent.<2>

The data show also that the proportion of non-conjoinable subordinate clauses is approximately the same (i.e. around 30% of all clauses) in conversation and stories, as well as in explanations. It seems reasonable to suppose that any strong drive away from subordination would affect these structures as well as the conjoinable ones. In fact, consideration of all aspects of these data makes it appear probable that there is no strong inclination either towards or away from subordination in any text type. Rather, the preference for particular semantic classes of conjunctions in each type produces effects in the syntax; in the case of narratives in particular, the predominance of sequential temporal conjunctions results in a de facto lowering of the frequency of subordinate clauses (as Labov observed). But this is not an independent phenomenon. After all, examination of the game explanations shows clearly how the comparatively high frequency of one conjunction (if) results in a greater proportion of subordinate conjunctions than in stories, despite the high proportion of narrative discourse in both text types. And a similar phenomenon is observed in the question sessions, with their high frequency of because.

Examination of the data from adult speakers indicates that conjunction is a cohesive device whose use varies according to text type. There is clear evidence that text type constrains not only the semantic class(es) of conjunctions used but also the frequency of conjunctions as

a class. Narrative discourse (whether in stories or in explanations) is, as we have seen, characterized by the use of a larger number of conjunctions than in conversation, as well as by the increased use of temporal conjunctions. As to the coordinate/subordinate distinction, it appears that the relative proportions of these types of conjunctions are not directly affected by text type, but vary as a consequence of the relevant shifts in the frequencies of semantic classes.

6.2 Remarks on Acquisition

Previous studies have shown that the complete mastery of conjunction is likely not attained until adolescence or even adulthood (see Section 3.4); the work of Scott (1984) and Wald (1986), as well as of Romaine (1985), provides clear evidence of this. In particular, it appears that mastery of the textual function of connectives-- the ability to use a variety of conjunctions and other connective expressions as cohesive devices-- is developed fairly late. It would also appear to be a factor which is mastered at variable levels by different speakers. Certainly, while all (normal) adults must acquire a certain basic ability to produce cohesive texts, it is a commonplace observation that not all speakers are equally gifted.

Nevertheless, it remains true that children begin acquiring the syntax and semantics of conjunction at around

age two, and that by age five most of them have a basic corpus of coordinate and subordinate conjunctions with which they are able to express all the major connective relations (Clancy et al., 1976; Bloom et al., 1980). (The possible exception to this is the disjunctive relation, expressed principally by or, which appears to lag behind the rest (Beilin & Lust, 1975a,b,c).) As far as the mechanics of conjunction go, all that remains at this stage is for the child to build up his repertoire of connectives so that he can more precisely encode various nuances. The main sphere of improvement is, as we have seen, the textual aspects of conjunction use.

It is with these textual aspects that this study has been concerned. In the previous chapter it was shown that children produce conjunctions of different classes and in varying amounts in different text types. In this respect they are like adults: frequency and type of conjunctions is a clear marker of text type in their speech as in that of adults.

Thus, this study has shed light on an aspect of the acquisition of conjunctions not examined by the other studies discussed in Section 3.4: their function in texts not just as a local producer of cohesion between sentences, but also as a global marker of text type. Children of age five, as previous research had shown, have mastered the fundamentals of the syntax and semantics of conjunctions. Similarly, they have a basic grasp of the textual function

of conjunctions. They are already aware, for example, of narrative discourse as a type characterized by the frequent use of conjunctions, especially sequential temporals. In fact, as we have seen, the five year olds actually produce more conjunctions in general and more temporal conjunctions in particular in their stories than the adults do. They appear to have internalized the temporal nature of narrative and to be overgeneralizing, producing vast numbers of sequential temporal conjunctions and almost no other ones.

That children use temporal conjunctions in narrative might simply indicate that they have grasped the function of this text type: to relate a sequence of events. But the fact that they use conjunctions much more frequently in narratives than in conversation indicates that they also have a concept of the form of a narrative: a text type characterized by (among other things) frequent conjunction use. They have a linguistic as well as a functional concept of this text type. Their use of conjunctions shows this clearly.

Similarly, the children's use of conjunctions in game explanations is symptomatic of the types of problems young children have with this difficult text type. The more advanced children show some evidence of beginning to formulate a notion of this text type along adult lines: viz. as characterized by a high proportion of narrative discourse but differing from stories in having a relatively high proportion of conditional structures. The younger

children, though, show evidence-- in their usage of conjunctions and elsewhere-- of attempting to deal with this task by focussing on one key moment of the game and producing a description of it. Thus, their conjunction use differs quite clearly from that in their narratives; as well, it does not highlight the conditional conjunction if.

Thus, this study has resulted in information not only about children's acquisition of conjunctions but also about their acquisition of the concept of text type.

Overall what have we discovered about children's textual competence? The evidence clearly indicates that by age five at the latest children have a conception of text type as an entity determined not only by function but also by linguistic form. For instance, they know not only what kinds of things a story can be about but also that certain linguistic structures are appropriate in a story. Specifically, they appear to feel that the use of sequential temporal conjunctions in almost every clause is one of the characteristics of a story. This contrasts with the low frequency but high semantic variability of conjunctions which they already know to characterize conversation. It would be difficult to explain all aspects of their use of conjunctions without assuming that the children are making linguistic decisions related to text type.

With regard to stories, Applebee (1978; 37) has claimed that they are characterized structurally by "formal opening or title, formal closing, and consistent past tense" (but

(see Gopnik (1986) for some interesting data). None of these features is obligatory, of course, but their presence will contribute to the recognition of a given text as a story. This study has shown that the overt encoding of temporal sequence is another characteristic that could be added to Applebee's list, and that it is especially important to children of about five years old. More specifically, children of this age appear to find the frequent use of and then to be itself a marker of a story.

This differentiates stories from both conversation and game explanations. It appears to be a highly text-type-specific usage. Whether greater confidence at producing explanations will result in a dramatic increase in the frequency of this combination in those texts as children grow older, I do not know. It is possible that the strategy of producing story-like explanations is not fully mastered before the child realizes that stories need not contain vast amounts of and thens to be acceptable; in this case, one would not expect this cluster ever to be as frequent in the explanations as in the stories. But even though it is clear that the children do not employ precisely the same linguistic structures in the various text types as adults do, there seems to be no doubt that they have a conception of text as a linguistically characterizable entity.

(On a broader level, we have seen that the use of one particular cohesive device, conjunction, is constrained by text type. Not only does a story contain a different

semantic mix of conjunctions than, say, a conversation, but it also contains more conjunctions. Conjunction is a favoured cohesive device in narrative texts, then, or at least in both stories and explanations. (There are, as Polanyi (1985) has indicated, several other types of narrative texts,<3> see Section 2.2.) It is, comparatively speaking, disfavoured in conversation. It would be interesting to discover how the other major cohesive devices are used in various text types. One question that remains to be answered is whether all cohesive devices are rarer in conversation than in narrative, or whether the various devices are found in different proportions in each text type. It should be possible to get a good idea of what linguistic structures characterize what text types and obtain further insight into the linguistic aspects of textuality. Halliday & Hasan's (1976) seminal work established the ways in which cohesion is created in texts in general; it is now important to determine how various texts can be distinguished from each other in this way.

This study has also reinforced our realization of the importance of closed class vocabulary as an indicator of text type, as Gopnik (1975) suggested. It suggests that we may ultimately find that the frequencies of other cohesive devices involving closed class vocabulary-- e.g. reference-- may turn out to be better indicators of text type than, say, lexical cohesion, which pertains to open class vocabulary with high semantic content. Although lexical cohesion is an

important device within any individual text, it may not be one that varies much-- with regard to frequency of use-- among text types.

With regard to acquisition, we already have some evidence that children master some cohesive techniques before others (e.g. McCutchen & Perfetti, 1982; Hedberg & Stoel-Gammon, 1984; Gopnik, 1986); in particular, lexical cohesion and reference seem to appear early, as they are used relatively more frequently in young children's texts. It would be interesting to have further information on how far children's use of the various cohesive devices corresponds to that of adults. (Less work has been done on adults' texts in this precise field.) The parallel question of to what extent the more difficult text types are difficult precisely because they require mastery of more sophisticated and later acquired cohesive devices-- as opposed to simply being less familiar to speakers-- is also of great interest. All of these questions, raised by this study, clearly merit further research.

Notes to Chapter VI

1. I am not certain why de Beaugrande should be opposed to Labov (and to my own findings) on this point, but possibly it is related to the fact (mentioned earlier) that his examples are all written (even literary) texts. It is the aim of the writer, far more than of the speaker, to avoid repetition. Certainly, written stories do not contain the recurrent and thens and and sos that characterize oral stories. The search for variety may well, therefore, lead a writer to use more subordinate conjunctions than an oral narrator would. But, even if this is the case, writing is secondary to speech, and a characteristic of written narrative alone cannot be claimed to be a characteristic of narrative in general. For further research in this area see Beaman (1984); a discussion of some of her results can be found in Section 4.3.5 of this thesis.
2. Whether it is a simple coincidence that the most frequently used conjunctions happen to be Bs is a question I do not go into any detail about here; some brief remarks are to be found in Chapter III (cf. Clark, 1973).
3. In fact, there is at least one type of narrative text in which one would expect conjunctions to be extremely rare: the "blow-by-blow" description. Although these also encode a temporal sequence, they differ from other

narrative texts in that they represent a present rather than a past series of events. The narrator speaks as the events are happening; he knows no more than his audience how his narrative will end. These texts have a staccato air and are characterized by the use of verbs in the simple present tense and (although I have no numerical data) a scarcity of overt interclausal connectives. The sportscast is one typical example of this genre; one would hardly expect to hear "he shoots and then he scores" instead of "he shoots, he scores"!

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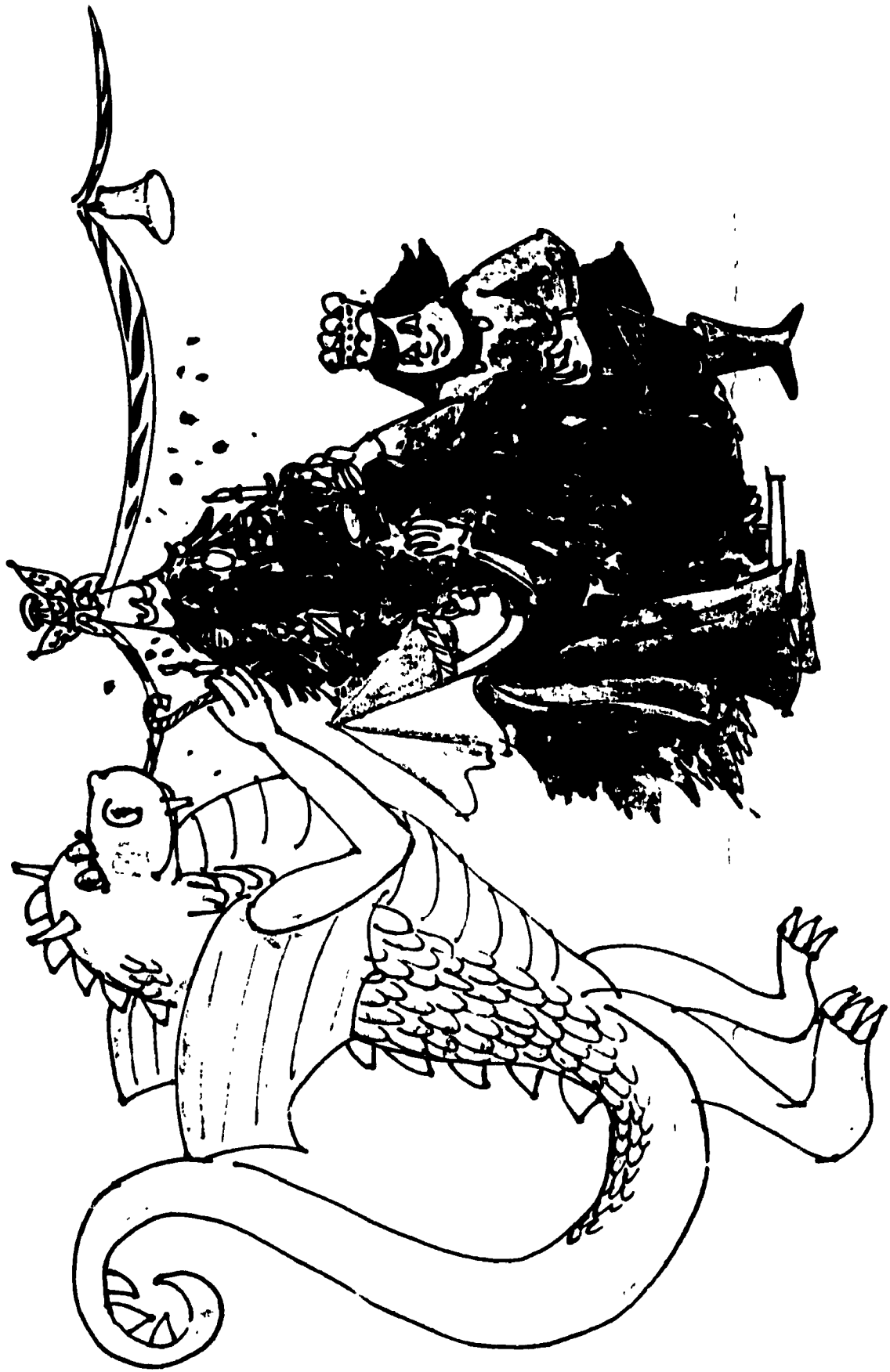
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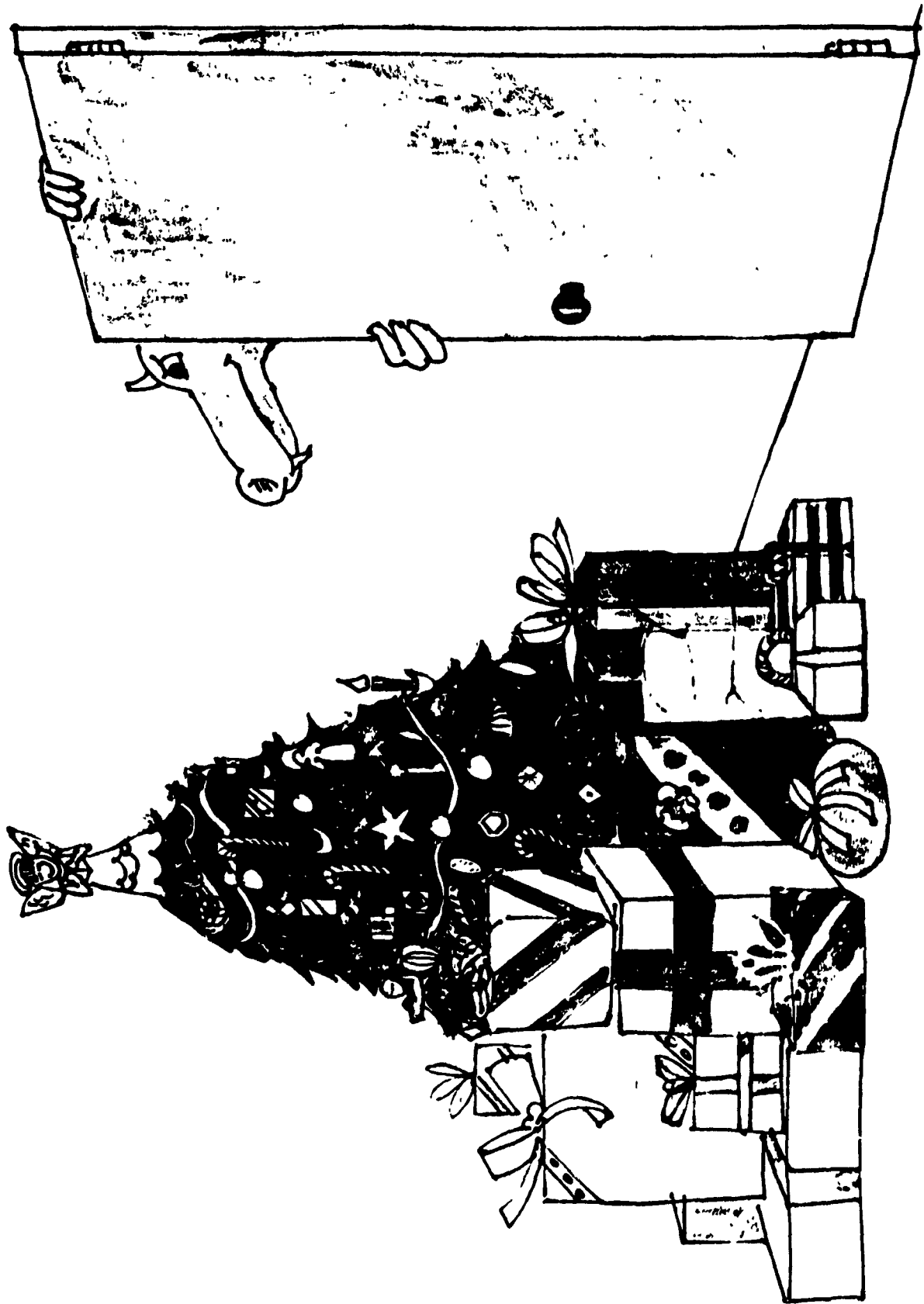
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APPENDIX A: PICTURES

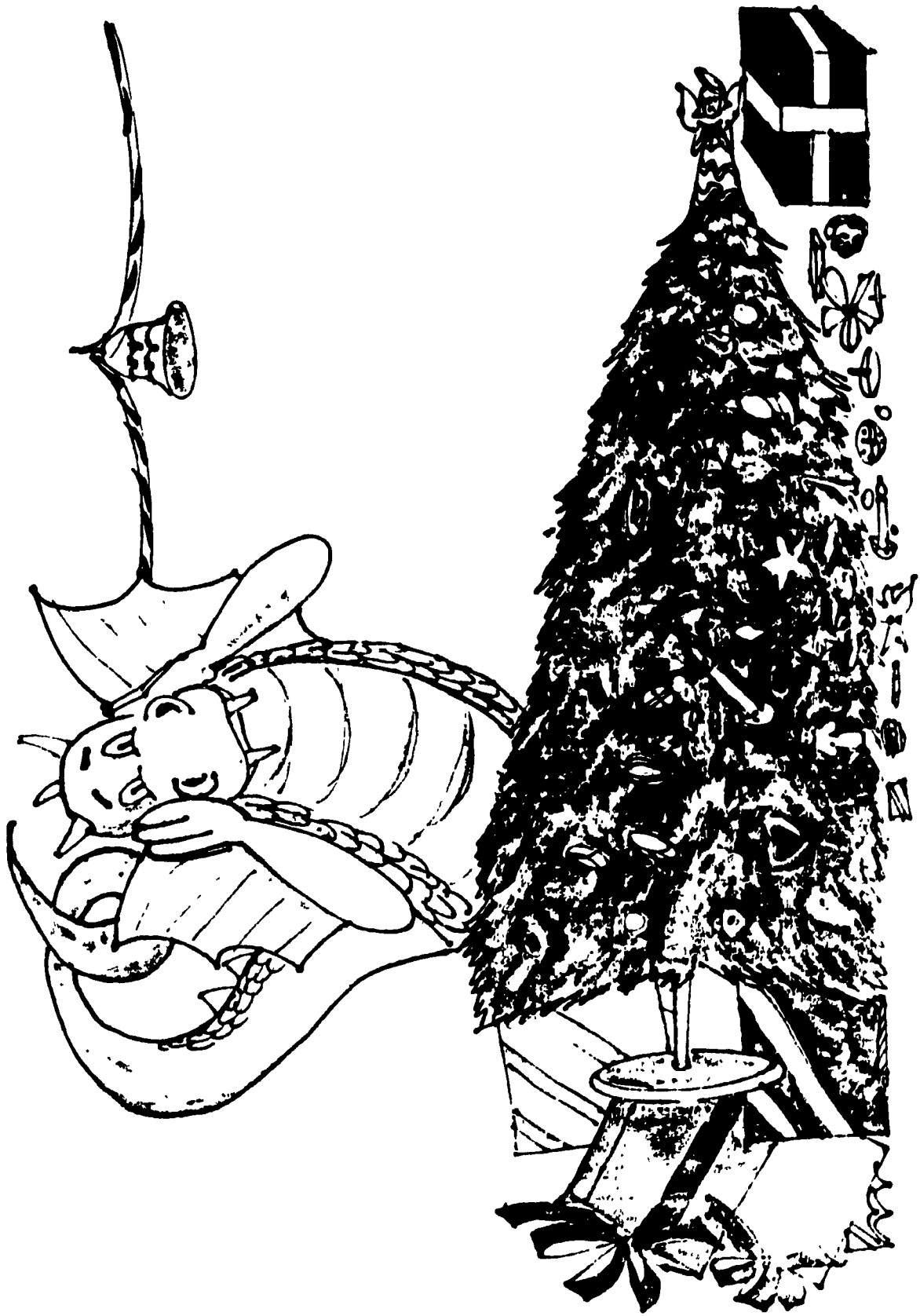
STORY 1: CHRISTMAS STORY



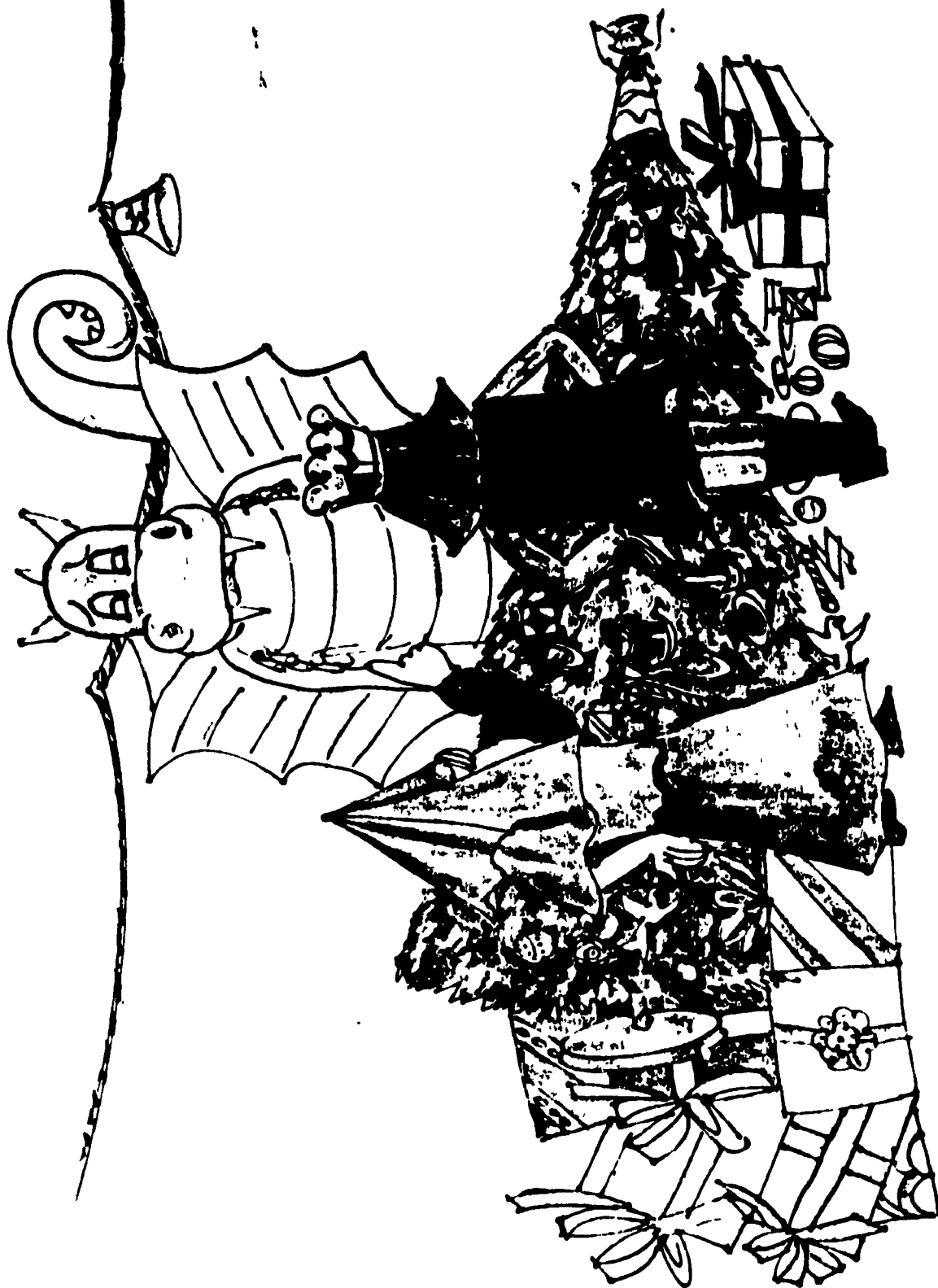


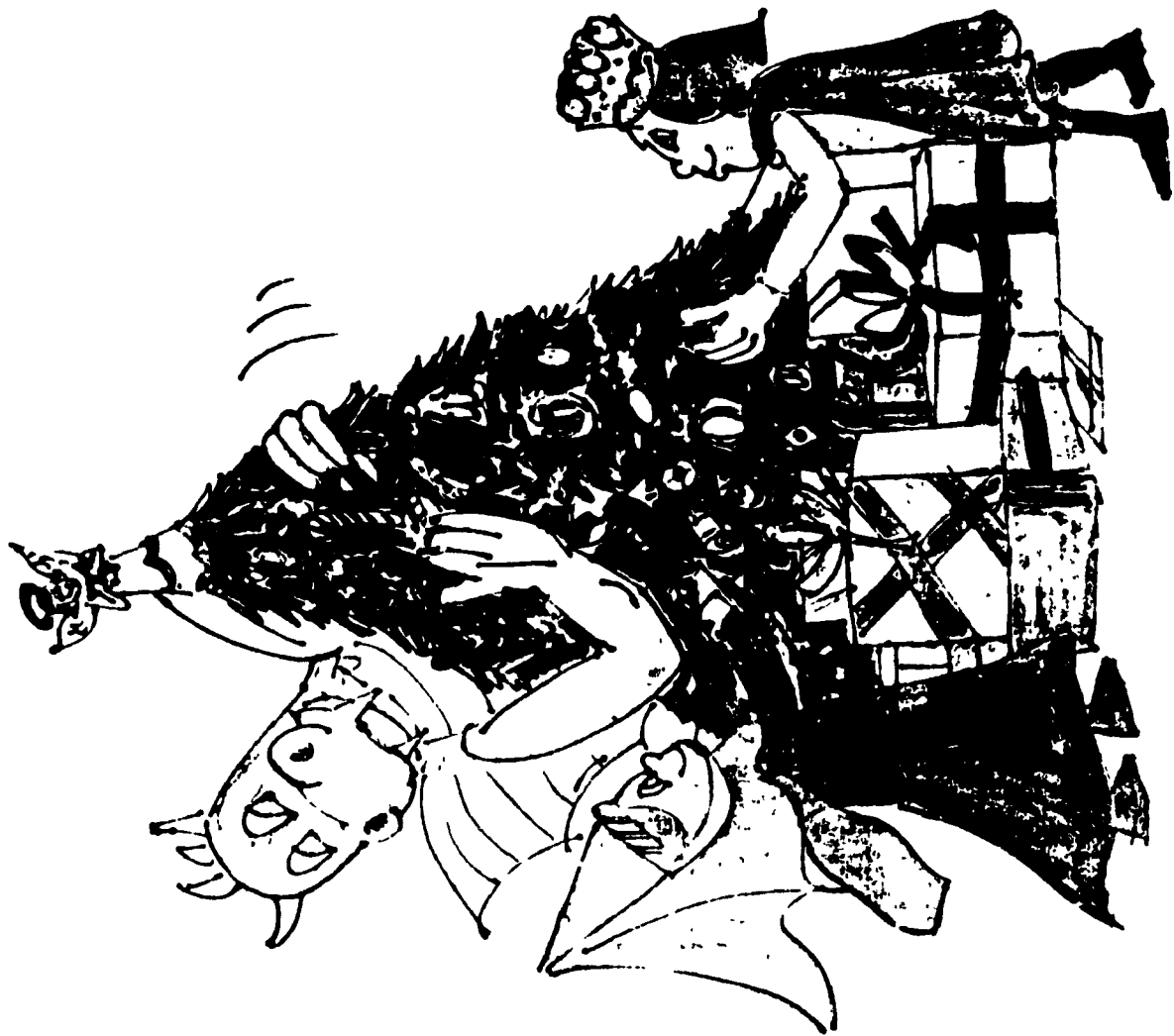










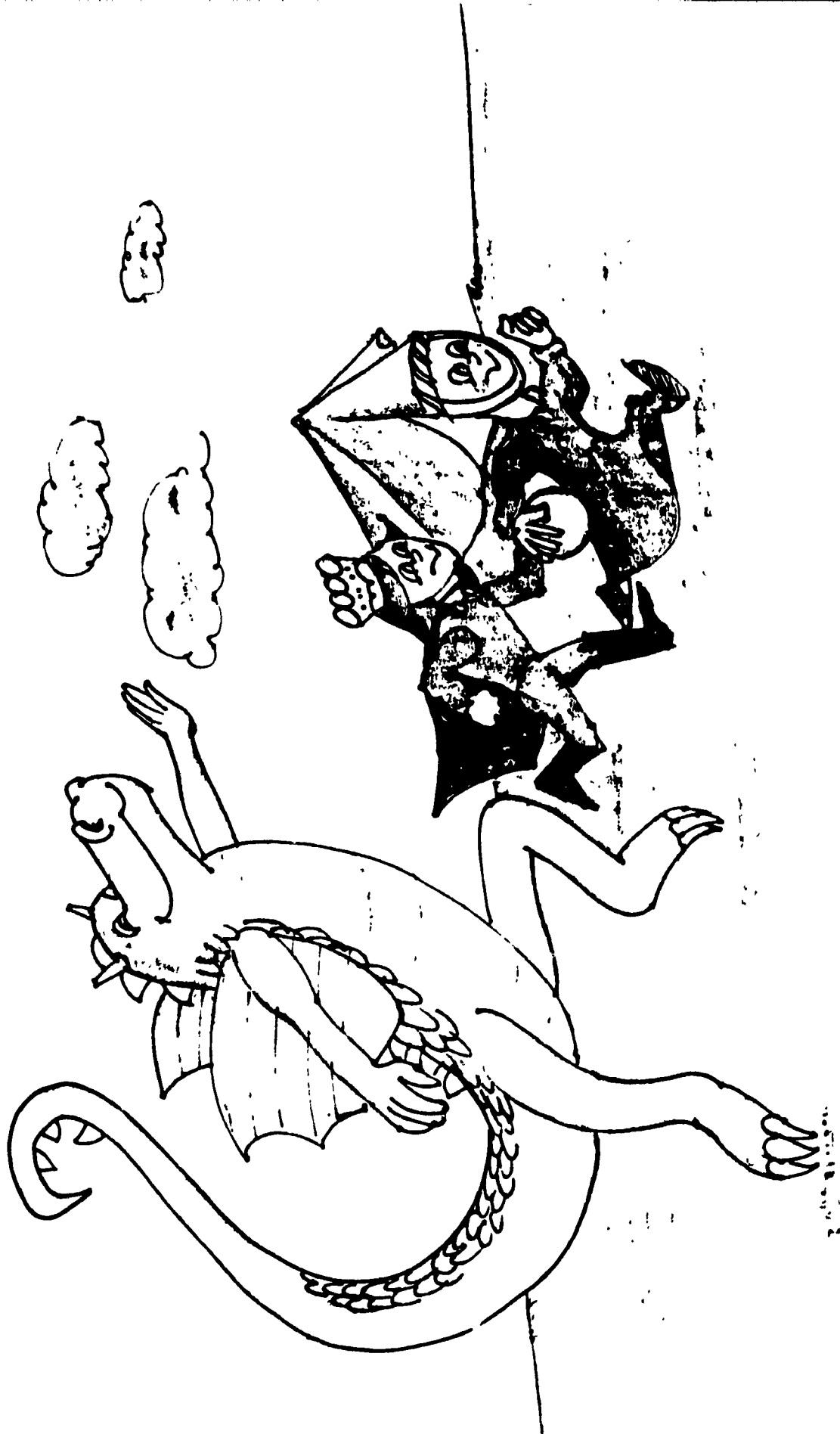




STORY 2: PICNIC STORY







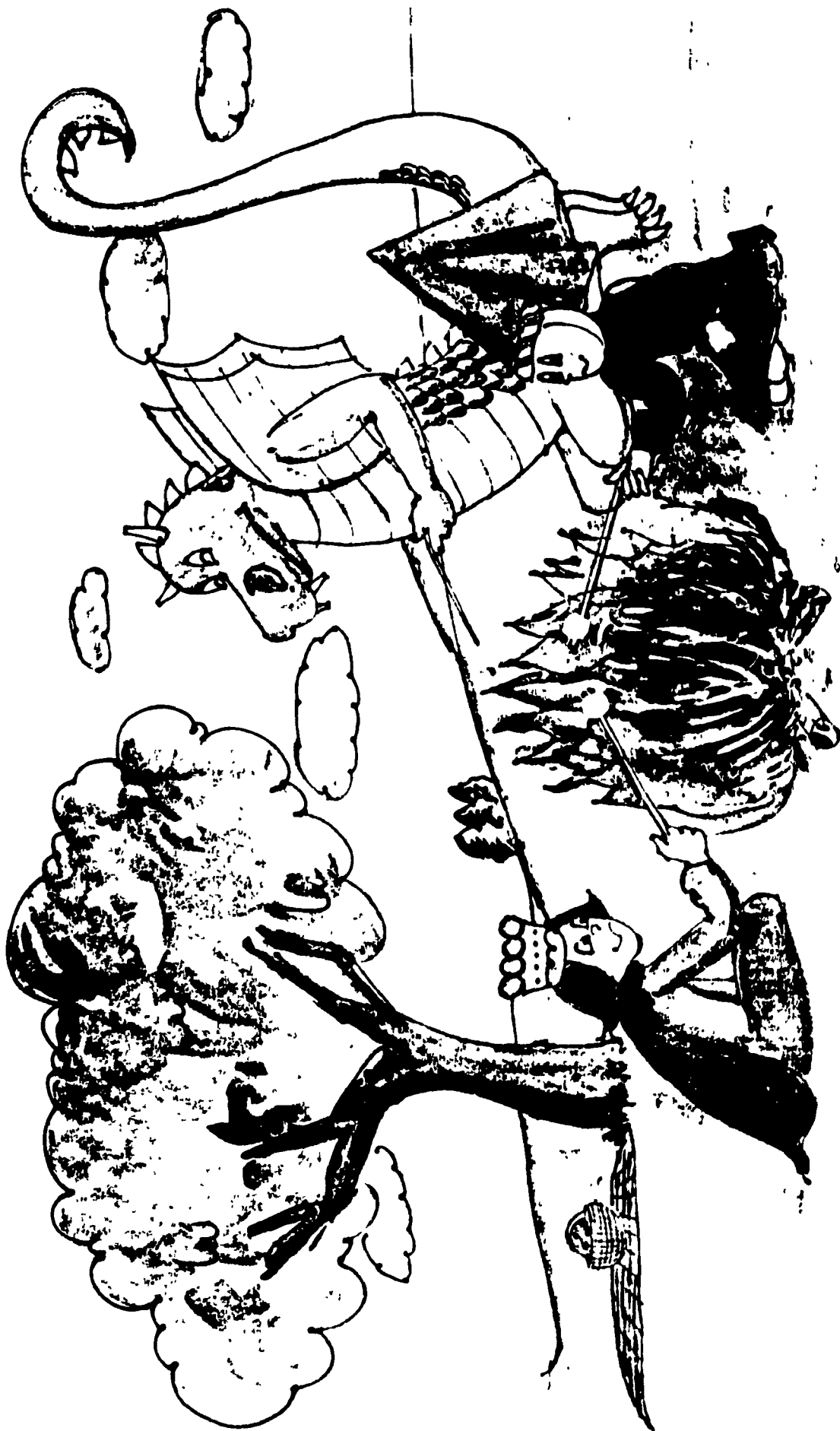




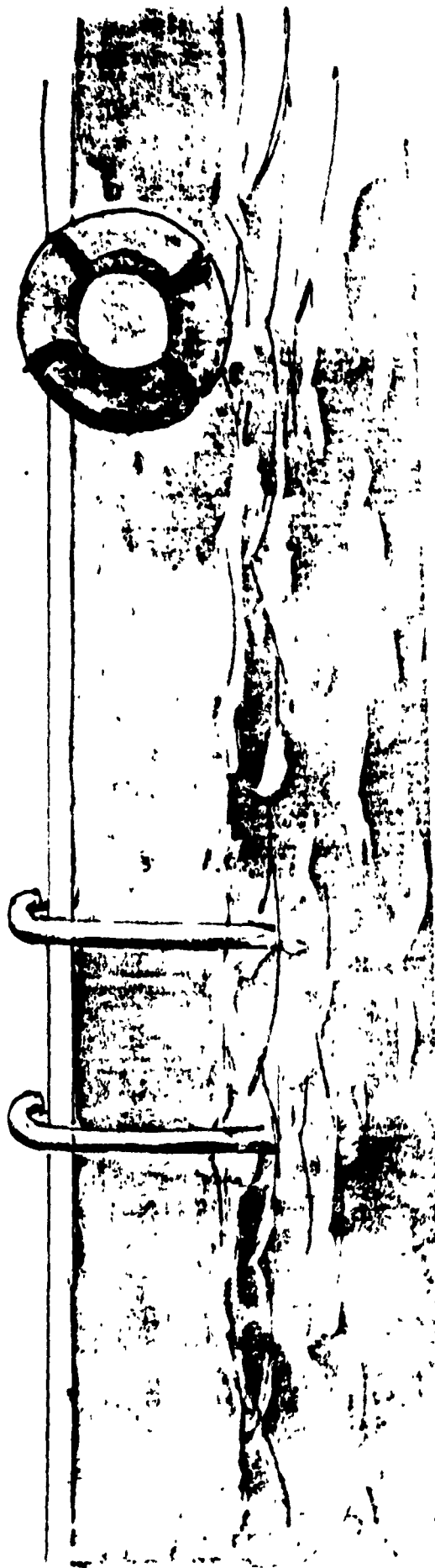
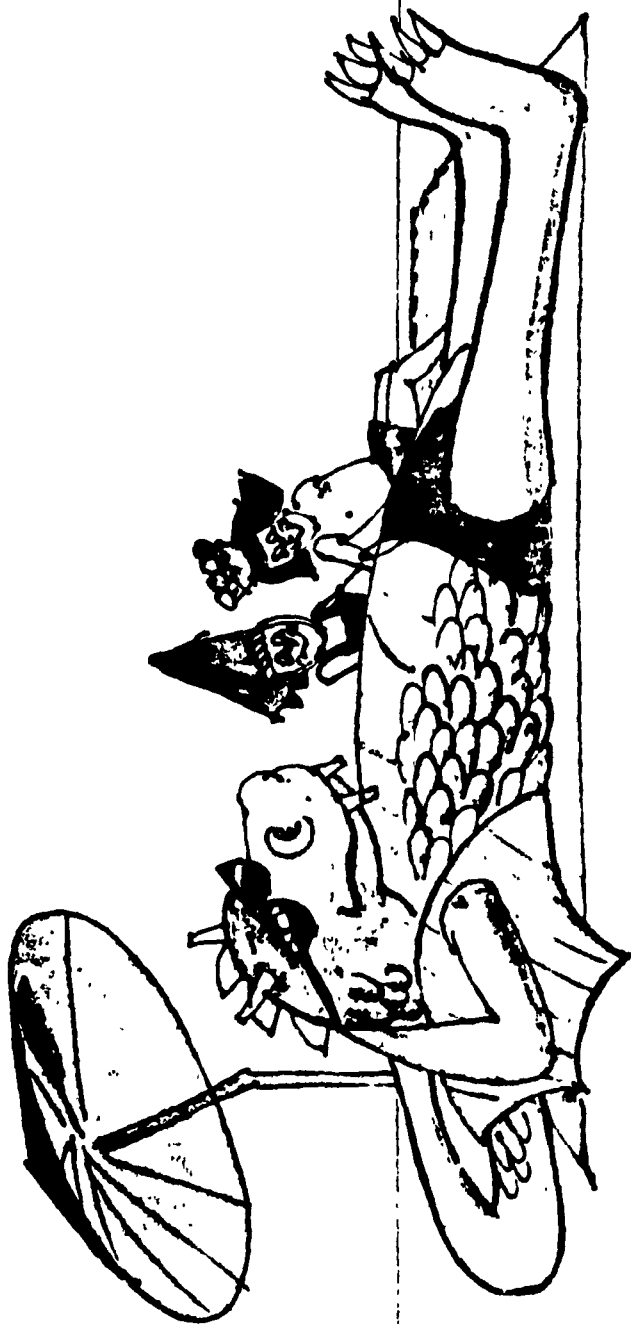


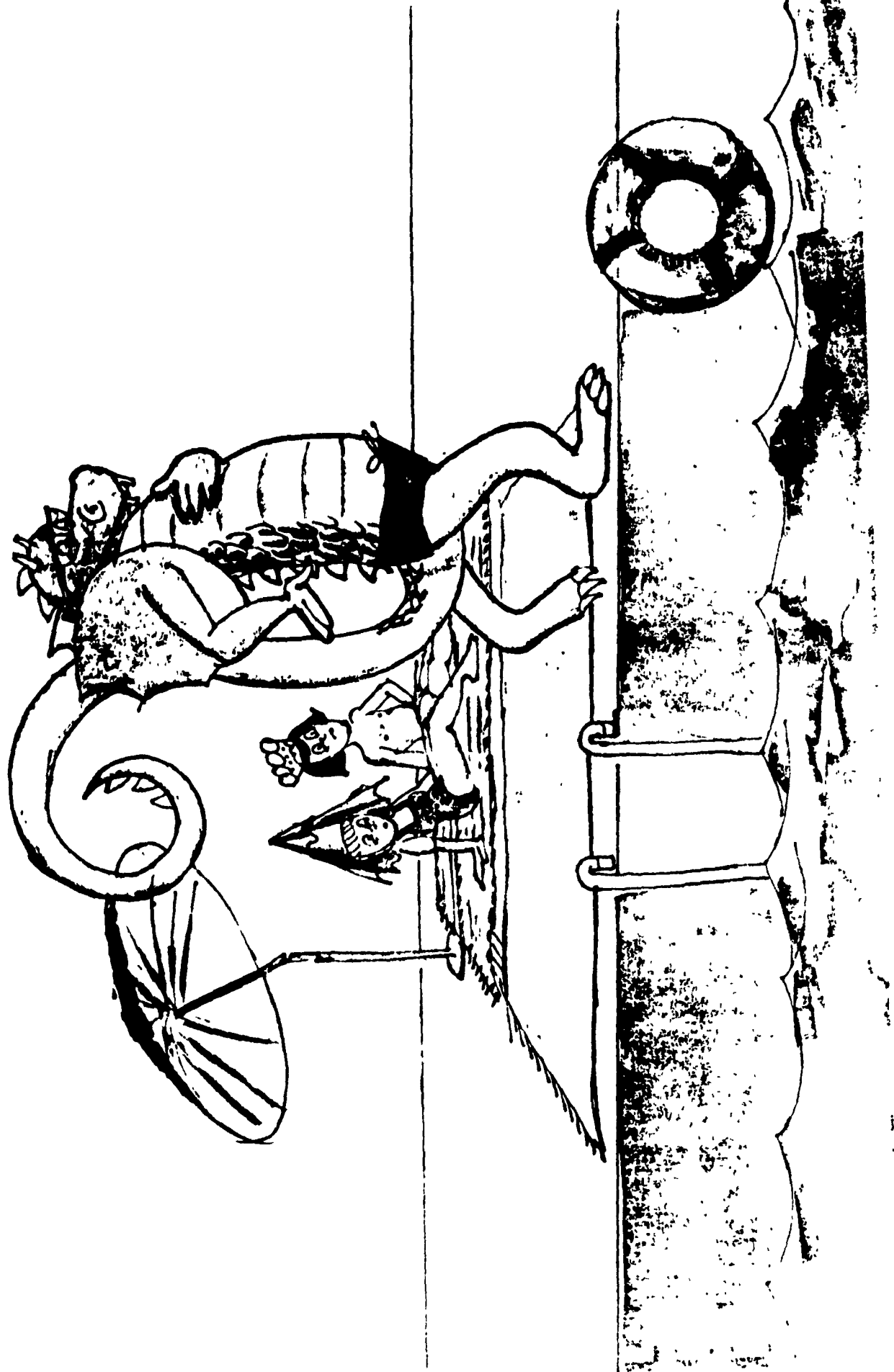


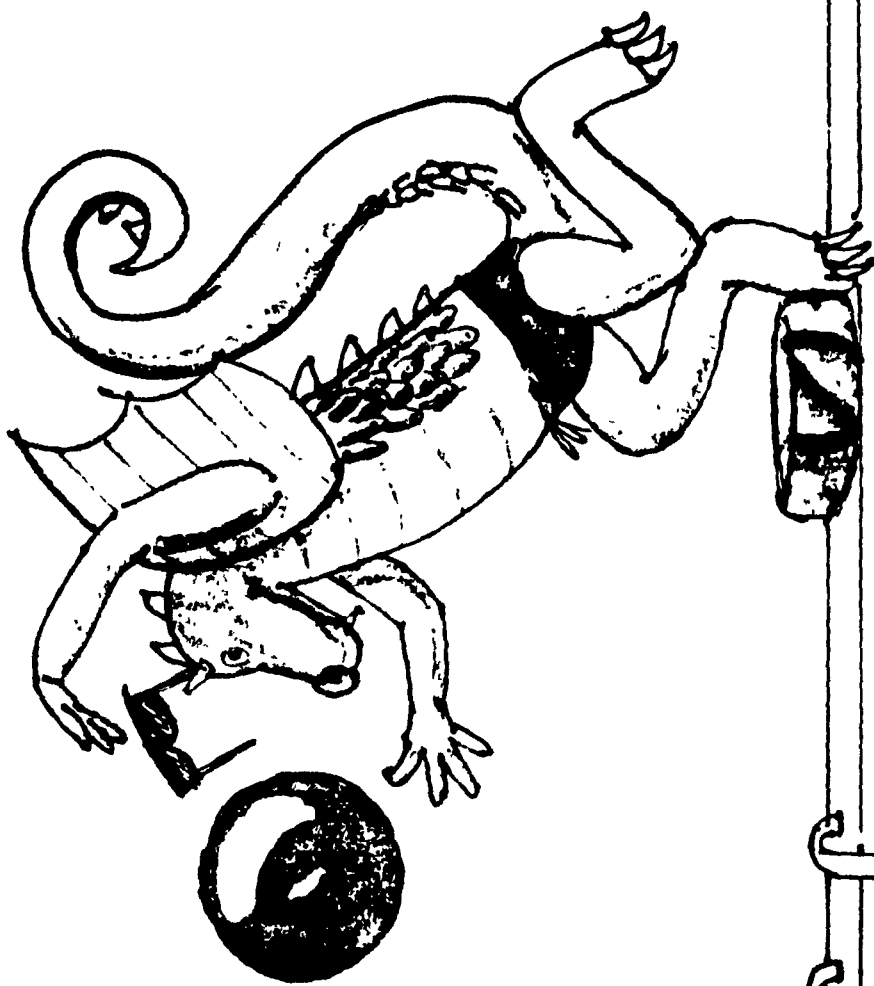




STORY 3: POOL STORY

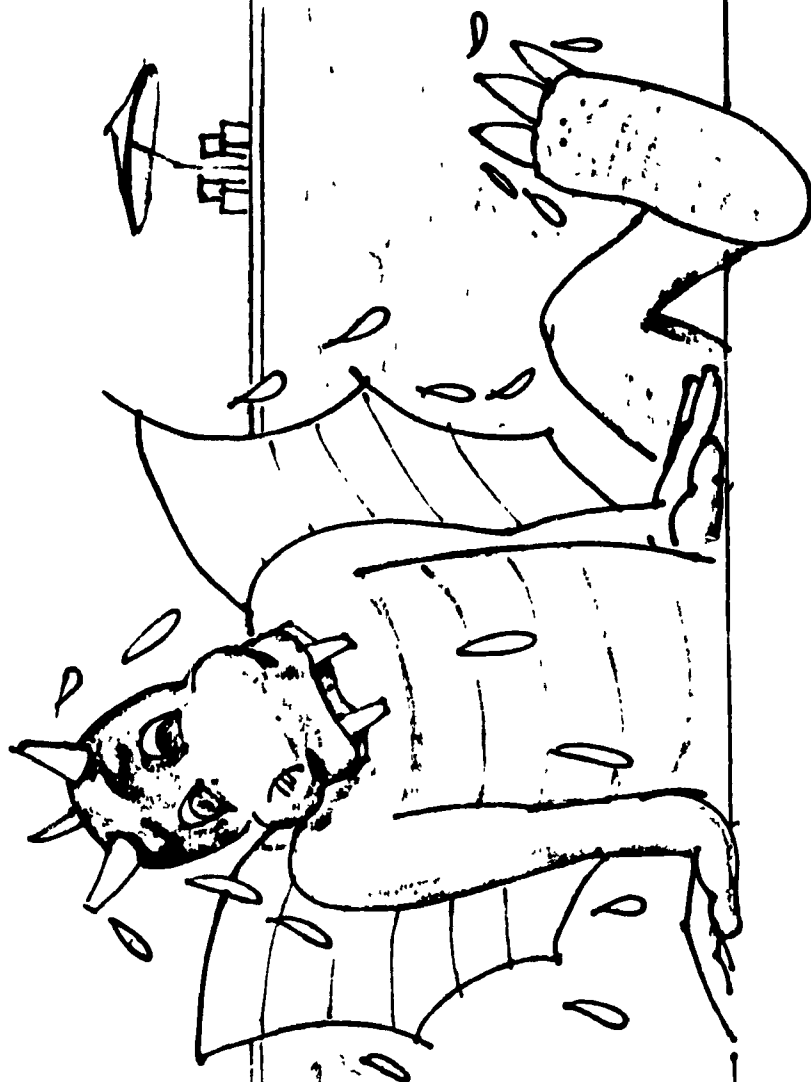




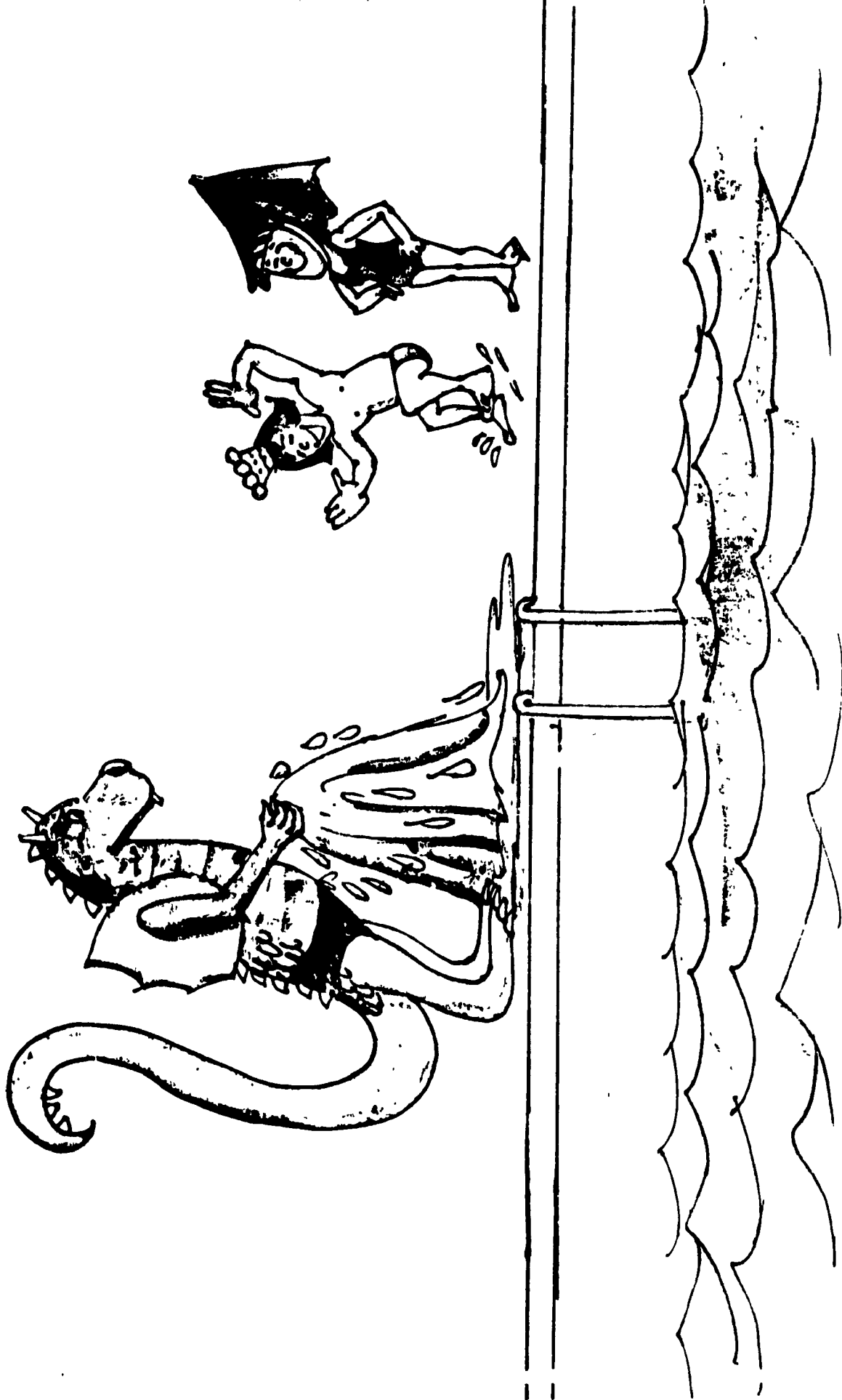


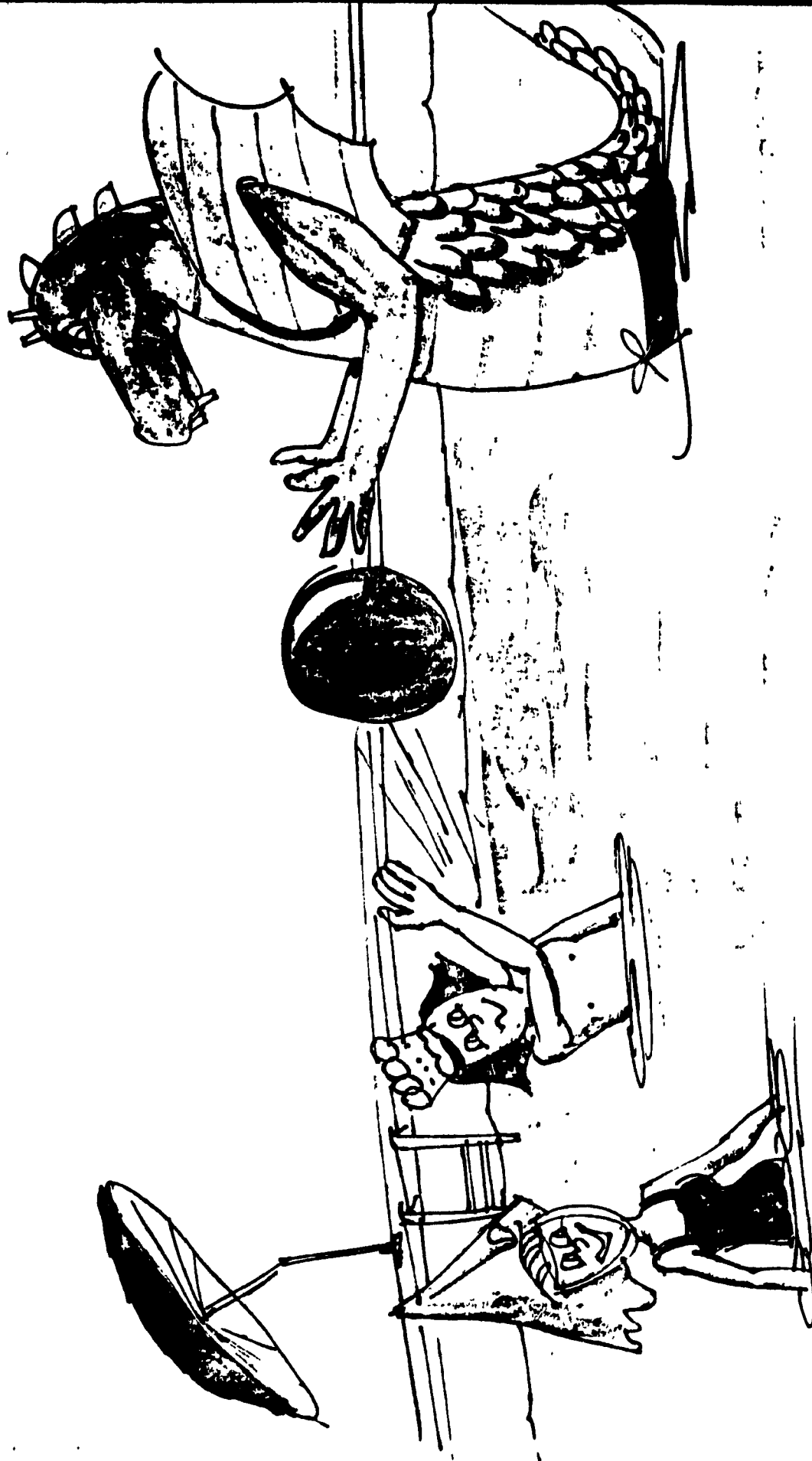




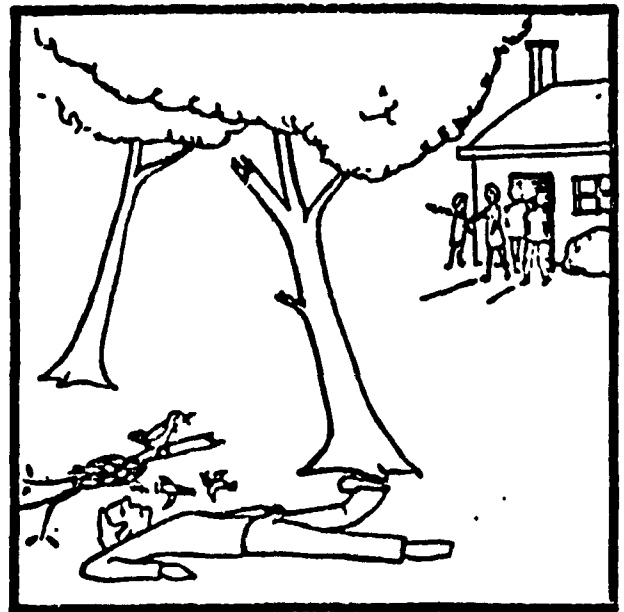
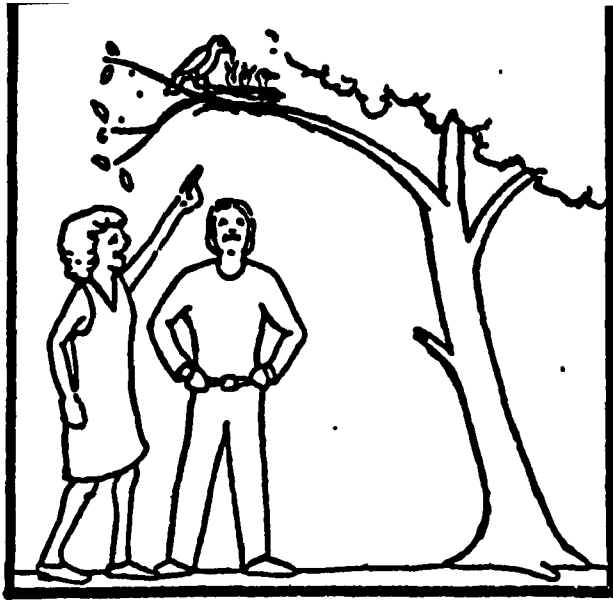








STORY 4: ACCIDENT STORY



APPENDIX B: QUESTIONS

Christmas Story

1. The prince, the princess and the dragon finished decorating the tree; what did they do next?
2. Why did the dragon go into the room alone?
3. The dragon was looking at the presents; what happened then?
4. Why did the tree fall down?
5. Why did the prince and princess rush into the room?
6. Why were they mad at the dragon?
7. Why did the dragon feel bad?
8. How did the tree get back up?
9. At the end of the story, what did the prince, princess and dragon all do?

Picnic Story

1. Why did the prince, the princess and the dragon go to the country?
2. Why did they spread the blanket under the tree?
3. When it started to rain, what were they all doing?
4. How did they know it was going to rain?
5. Why did they get all wet?
6. Why did they look unhappy?
7. How did the dragon light the fire?
8. How did they dry their clothes?
9. At the end of the story, what did they all do?

Swimming Story

1. When the prince, princess and dragon were by the pool, what did the dragon go to look for?
2. When the dragon found the ball, what did he do next?
3. Why did he fall in the pool?
4. The dragon fell in the pool; what happened next?
5. Why did the prince and princess jump up and yell at the dragon?
6. The dragon got out of the pool; what did he do next?
7. How did his towel get wet?
8. Why did everyone laugh at the dragon?
9. At the end of the story, what did they all do?

APPENDIX C: TRANSCRIPTION CONVENTIONS

Transcription Conventions for Discourse Samples

Examples from the corpora of child and adult discourse are followed by a bracketed identification, e.g. (XY; ad). The first part of the identification code is the subject's initials and the second indicates his or her age: 'ad' indicates an adult; the children's ages are shown in the format years;months, e.g. 5;2.

The following symbols are to be found in the examples cited:

CAPITALS	emphatic stress or pitch
~	incomplete word, e.g. <u>th</u> ~ <u>then</u>
_'	intrasentential pause
(PA)	intersentential pause
(MU)	mumbled speech
(LA)	laughter
I:	interviewer's speech

These conventions are used primarily in the examples in Chapters IV and V; those in Chapter III have been tidied up to some extent, with pauses, dysfluencies, markers of vocalic quality, and small attention markers by the interviewer removed. Excisions are indicated by the customary three dots (...).

APPENDIX D: TABLES

Table 4.1

Conjunctions in Adults' Total Discourse

	<u>No.</u>	<u>Freq./1000</u>
and (total)	1082	33.43
and (symm.)	494	15.26
and (asymm.)	588	18.17
so	354	10.94
because/'cause	213	6.58
but	153	4.73
then	131	4.05
when	90	2.78
if	88	2.72
or	39	1.21
as	19	.59
while	15	.46
after	14	.43
once	9	.28
until/till	9	.28
although/though	8	.25
since (total)	8	.25
since (caus.)	5	.15
since (temp.)	3	.09
before	7	.22
except	2	.06
unless	2	.06
either	1	.03
whereas	1	.03
yet	1	.03
Total singles	2246	69.39
Total words = 32,369		

and then	61	1.89
and so	40	1.24
and if	9	.28
and when	9	.28
so when	6	.19
and because	5	.15
so then	5	.15
but if	4	.12
but then	4	.12
but when	4	.12
so if	4	.12
and once	3	.09
because if	3	.09
and since	2	.06
because then	2	.06
but as	2	.06
so after	2	.06
and after	1	.03
and as	1	.03
and though	1	.03
and till	1	.03
and while	1	.03
because when	1	.03
but since	1	.03
but while	1	.03
but yet	1	.03
or because	1	.03
or before	1	.03
or if	1	.03
so as	1	.03
so once	1	.03
then if	1	.03
and so then	4	.12
and then if	2	.06
and then when	2	.06
and then after	1	.03
Total combinations	189	5.84

Table 4.2

Conjoined Clauses in Adults' Total Discourse

	# <u>Clauses</u>	# <u>Conjoined</u>	% <u>Conjoined</u>
Total	5217	1963	37.6
Conjoinable	3577	1963	54.9
% Conjoinable clauses (n=3577)			68.6
% Nonconjoinable clauses (n=1640)			31.4

Table 4.3

Conjunctions in Adults' Conversation

	<u>No.</u>	<u>Freq./1000</u>
and (total)	61	11.3
and (symm.)	41	7.59
and (asymm.)	20	3.7
but	52	9.63
so	51	9.45
because/'cause	30	5.56
if	18	3.33
or	17	3.15
when	15	2.78
then	5	.93
as	3	.56
while	3	.56
before	2	.37
since (temp.)	2	.37
although/though	1	.19
once	1	.19
until/till	1	.19
Total singles	262	48.53
Total words = 5399		
and so	3	.56
and then	3	.56
and if	1	.19
but then	1	.19
but when	1	.19
Total combinations	9	1.67

Table 4.4

Conjoined Clauses in Adults' Conversation

	<u># Clauses</u>	<u># Conjoined</u>	<u>% Conjoined</u>
Total	904	212	23.5
Conjoinable	645	212	32.9
% Conjoinable clauses (n=645)			71.4
% Nonconjoinable clauses (n=259)			28.7

Table 4.5

Semantic Classes of Conjunctions in Adults' Conversation

	<u>No.</u>	<u>%</u>
n=262		
Additive	58	22.1
Adversative	53	20.2
Temporal	52	19.9
Causal	99	37.8
Sequential temporals	25	9.5
% of temporals		48.1
And (n=61)		
symmetric	41	67.2
asymmetric	20	32.8

Table 4.6

Syntactic Classes of Conjunctions in Adults' Conversation

	<u>No.</u>	<u>%</u>
n=262		
1	19	7.3
2	51	19.5
3	57	21.8
4	135	51.5
Total Ps	76	29
Total Bs	186	71

Table 4.7

Conjunctions in All Adults' Stories

	<u>No.</u>	<u>Freq./1000</u>
and (total)	812	42.28
and (symm.)	348	18.12
and (asymm.)	464	24.16
so	248	12.91
because/'cause	100	5.21
but	79	4.11
then	70	3.65
when	54	2.81
if	19	.99
as	14	.73
or	10	.52
while	8	.42
after	7	.36
since (total)	5	.26
since (caus.)	4	.21
since (temp.)	1	.05
although/though	4	.21
until/till	3	.16
before	2	.1
except	2	.1
once	1	.05
whereas	1	.05
yet	1	.05
Total singles	1440	74.98
Total words = 19,205		

and then	38	1.98
and so	36	1.88
and when	7	.36
so when	5	.26
so then	4	.21
and because	3	.16
but then	3	.16
and since	2	.1
because if	2	.1
but as	2	.1
but if	2	.1
but when	2	.1
and after	1	.05
and as	1	.05
and though	1	.05
and while	1	.05
because then	1	.05
but since	1	.05
but while	1	.05
but yet	1	.05
or because	1	.05
or before	1	.05
so after	1	.05
so as	1	.05
so once	1	.05
and so then	4	.21
and then when	1	.05
Total combinations	124	6.46

Table 4.8

Conjoined Clauses in Adults' Stories

	# <u>Clauses</u>	# <u>Conjoined</u>	% <u>Conjoined</u>
Total	3023	1287	42.6
Conjoinable	2063	1287	62.4
% Conjoinable clauses (n=2063)			68.2
% Nonconjoinable clauses (n=960)			31.8

Table 4.9

Semantic Classes of Conjunctions in Adults' Stories

	<u>No.</u>	<u>%</u>
n=1440		
Additive	358	24.9
Adversative	87	6
Temporal	624	43.3
Causal	371	25.8
Sequential temporals	534	37.1
% of temporals		85.6
And (n=812)		
symmetric	348	42.9
asymmetric	464	57.1

Table 4.10

Syntactic Classes of Conjunctions in Adults' Stories

	<u>No.</u>	<u>%</u>
n=1440		
1	23	1.6
2	250	17.4
3	195	13.5
4	972	67.5
Total Ps	218	15.1
Total Bs	1222	84.9

Table 4.11

Conjunctions in Adults' Free Stories

	<u>No.</u>	<u>Freq./1000</u>
and (total)	435	41.18
and (symm.)	189	17.89
and (asymm.)	246	23.29
so	183	17.32
because/'cause	68	6.44
but	46	4.35
when	40	3.79
then	30	2.84
if	16	1.52
as	8	.76
while	5	.47
or	4	.38
since (total)	3	.28
since (caus.)	2	.19
since (temp.)	1	.1
although/though	2	.19
before	2	.19
except	2	.19
after	1	.1
until/till	1	.1
whereas	1	.1
Total singles	847	80.18
Total words = 10,564		
and so	25	2.37
and then	14	1.33
and when	6	.57
so when	5	.47
and because	3	.28
so then	3	.28
and since (caus.)	2	.19
because if	2	.19
but if	2	.19
but then	2	.19
and as	1	.1
and while	1	.1
because then	1	.1
but as	1	.1
but since (temp.)	1	.1
but when	1	.1
or before	1	.1
so as	1	.1
and so then	2	.19
and then when	1	.1
Total combinations	74	7.01

Table 4.12

Conjunctions in Adults' Prompted Stories

	<u>No.</u>	<u>Freq./1000</u>
and (total)	377	43.63
and (symm.)	159	18.4
and (asymm.)	218	25.23
so	65	7.52
then	40	4.63
but	33	3.82
because/'cause	32	3.7
when	14	1.62
after	6	.69
as	6	.69
or	6	.69
if	3	.35
while	3	.35
although/though	2	.23
since (caus.)	2	.23
until/till	2	.23
once	1	.12
yet	1	.12
Total singles	593	68.63
Total words = 8641		
and then	24	2.78
and so	11	1.27
and after	1	.12
and though	1	.12
and when	1	.12
but as	1	.12
but then	1	.12
but when	1	.12
but while	1	.12
but yet	1	.12
or because	1	.12
so after	1	.12
so once	1	.12
so then	1	.12
and so then	2	.23
Total combinations	49	5.67

Table 4.13

Conjoined Clauses in Adults' Free Stories

	# <u>Clauses</u>	# <u>Conjoined</u>	% <u>Conjoined</u>
Total	1758	751	42.7
Conjoinable	1186	751	63.3
% Conjoinable clauses (n=1186)			67.5
% Nonconjoinable clauses (n=572)			32.5

Table 4.14

Conjoined Clauses in Adults' Prompted Stories

	# <u>Clauses</u>	# <u>Conjoined</u>	% <u>Conjoined</u>
Total	1265	536	42.4
Conjoinable	877	536	61.1
% Conjoinable clauses (n=877)			69.3
% Nonconjoinable clauses (n=388)			30.7

Table 4.15

**Semantic Classes of Conjunctions in Adults'
Free Stories**

	<u>No.</u>	<u>%</u>
n=847		
Additive	193	22.8
Adversative	51	6
Temporal	334	39.4
Causal	269	31.8
Sequential temporals	276	32.6
% of temporals		82.6
And (n=435)		
symmetric	189	43.5
asymmetric	246	56.6

Table 4.16

**Semantic Classes of Conjunctions in Adults'
Prompted Stories**

	<u>No.</u>	<u>%</u>
n=593		
Additive	165	27.8
Adversative	36	6.1
Temporal	290	48.9
Causal	102	17.2
Sequential temporals	258	43.5
% of temporals		89
And (n=377)		
symmetric	159	42.2
asymmetric	218	57.8

Table 4.17

Conjunctions in Adults' Game Explanations

	<u>No.</u>	<u>Freq./1000</u>
and (total)	170	32.84
and (symm.)	84	16.23
and (asymm.)	86	16.61
if	49	9.47
so	46	8.89
then	44	8.5
but	20	3.86
when	13	2.51
because/'cause	10	1.93
or	9	1.74
once	7	1.35
after	6	1.16
until/till	5	.97
although/though	3	.58
before	3	.58
while	3	.58
as	1	.19
either	1	.19
unless	1	.19
Total singles	391	75.53
Total words = 5177		
and then	16	3.09
and if	8	1.55
so if	4	.77
and once	3	.58
and when	2	.39
but if	2	.39
and so	1	.19
and till	1	.19
because if	1	.19
because then	1	.19
but when	1	.19
or if	1	.19
so after	1	.19
so then	1	.19
then if	1	.19
and then if	2	.39
and then after	1	.19
and then when	1	.19
Total combinations	48	9.27

Table 4.18

Conjoined Clauses in Adults' Game Explanations

	# <u>Clauses</u>	# <u>Conjoined</u>	% <u>Conjoined</u>
Total	820	328	40
Conjoinable	543	328	60.4
% Conjoinable clauses (n=543)			66.2
% Nonconjoinable clauses (n=277)			33.8

Table 4.19

Semantic Classes of Conjunctions in Adults' Game Explanations

	<u>No.</u>	<u>%</u>
n=391		
Additive	94	24
Adversative	24	6.1
Temporal	168	43
Causal	105	26.9
Sequential Temporals	130	33.3
% of temporals		77.4
And (n=170)		
symmetric	84	49.4
asymmetric	86	50.6

Table 4.20

Syntactic Classes of Conjunctions in Adults' Game Explanations

	<u>No.</u>	<u>%</u>
n=391		
1	52	13.3
2	46	11.8
3	49	12.5
4	244	62.4
Total Ps	101	25.8
Total Bs	290	74.2

Table 5.1

Conjunctions in Children's Total Discourse

<u>All Children</u>	<u>No.</u>	<u>Freq./1000</u>
and (total)	479	31.05
and (symm.)	164	10.63
and (asymm.)	315	20.42
because	239	15.49
then	226	14.65
but	108	7
so	54	3.5
when	34	2.2
if	12	.78
after	4	.26
before	2	.13
except	2	.13
or (else)	2	.13
till	2	.13
while	2	.13
as	1	.07
though	1	.07
Total singles	1168	75.72
Total words = 15,426		
and then	144	9.34
and when	8	.52
so then	6	.39
and so	4	.26
but then	4	.26
and if	2	.13
but if	2	.13
and after	1	.07
because if	1	.07
because then	1	.07
because when	1	.07
but after	1	.07
so as	1	.07
Total combinations	176	11.41
<u>Twos</u>		
and (symm.)	1	3.37
because	1	3.37
Total	2	6.73
Total words = 297		

Threes

and (total)	48	20.21
and (symm.)	18	7.58
and (asymm.)	30	12.63
because	59	24.84
then	16	6.74
but	14	5.89
so	2	.84
after	1	.42
when	1	.42
Total singles	141	59.37
Total words = 2375		
and then	11	4.63
Total combinations	11	4.63

Fours

and (total)	274	32.49
and (symm.)	109	12.93
and (asymm.)	165	19.57
because	126	14.94
then	118	13.99
but	75	8.9
so	33	3.91
when	23	2.73
if	12	1.42
till	2	.24
after	1	.12
as	1	.12
before	1	.12
or	1	.12
while	1	.12
Total singles	668	79.22
Total words = 8432		
and then	69	8.18
but then	3	.36
and when	5	.59
because if	1	.12
so then	2	.24
and if	2	.24
but if	2	.24
and so	3	.36
because when	1	.12
because then	1	.12
so as	1	.12
Total combinations	90	10.67

Fives

and (total)	156	36.09
and (symm.)	36	8.33
and (asymm.)	120	27.77
then	92	21.29
because	53	12.26
but	19	4.39
so	19	4.39
when	10	2.31
after	2	.46
except	2	.46
before	1	.23
or else	1	.23
though	1	.23
while	1	.23
Total singles	357	82.6
Total words = 4322		
and then	64	14.81
so then	4	.93
and when	3	.69
and after	1	.23
and so	1	.23
but after	1	.23
but then	1	.23
Total combinations	75	17.35

Table 5.2**Conjoined Clauses in Children's Total Discourse**

	<u># Clauses</u>	<u># Conjoined</u>	<u>% Conjoined</u>
<u>All</u>			
Total	2731	900	33
Conjoinable	2444	900	36.8
% Conjoinable clauses (n=2444)			89.5
% Nonconjoinable clauses (n=287)			10.5
<u>Twos</u>			
Total	50	1	2
Conjoinable	50	1	2
% Conjoinable clauses (n=50)			100
% Nonconjoinable clauses (n=0)			0
<u>Threes</u>			
Total	436	106	24.3
Conjoinable	396	106	26.8
% Conjoinable clauses (n=396)			90.8
% Nonconjoinable clauses (n=40)			9.2
<u>Fours</u>			
Total	1545	527	34.1
Conjoinable	1380	527	38.2
% Conjoinable clauses (n=1380)			89.3
% Nonconjoinable clauses (n=165)			10.7
<u>Fives</u>			
Total	700	266	38
Conjoinable	618	266	43
% Conjoinable clauses (n=618)			88.3
% Nonconjoinable clauses (n=82)			11.7

Table 5.3

Conjunction Frequency in Children's Conversation

<u>All</u>	<u>No.</u>	<u>Freq./1000</u>
and (total)	151	17.44
and (symm.)	94	10.86
and (asymm.)	57	6.58
but	90	10.39
because	52	6.01
then	45	5.19
when	23	2.66
so	15	1.73
if	6	.69
after	3	.35
while	2	.23
or	1	.12
though	1	.12
Total singles	389	44.93
Total words = 8658		
and then	20	2.31
and when	4	.46
and so	2	.23
and after	1	.12
because then	1	.12
but after	1	.12
but then	1	.12
Total combinations	30	3.47
<u>Twos</u>		
and (symm.)	1	4.2
because	1	4.2
Total	2	8.4
Total words = 238		

Threes

and (total)	28	17.36
and (symm.)	13	8.06
and (asymm.)	15	9.29
but	13	8.06
then	10	6.19
because	8	4.96
after	1	.62
so	1	.62

Total singles	61	37.82
Total words = 1613		

and then	5	3.09
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Total combinations	5	3.09
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Fours

and (total)	96	20.71
and (symm.)	62	13.37
and (asymm.)	34	7.33
but	62	13.37
because	31	6.69
then	27	5.82
when	17	3.67
so	8	1.73
if	6	1.29
or	1	.22
while	1	.22

Total singles	249	53.71
Total words = 4636		

and then	11	2.37
and when	3	.65
and so	2	.43
because then	1	.22
but then	1	.22

Total combinations	18	3.88
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Fives

and (total)	26	11.98
and (symm.)	18	8.29
and (asymm.)	8	3.69
but	15	6.91
because	12	5.53
then	8	3.69
so	6	2.76
when	6	2.76
after	2	.92
though	1	.46
while	1	.46
Total singles	77	35.47
Total words = 2171		
and then	4	1.84
and after	1	.46
and when	1	.46
but after	1	.46
Total combinations	7	3.22

Table 5.4

Conjoined Clauses in Children's Conversation

	# <u>Clauses</u>	# <u>Conjoined</u>	% <u>Conjoined</u>
<u>All</u>			
Total	1447	330	22.8
Conjoinable	1308	330	25.2
% Conjoinable clauses (n=1308)			90.4
% Nonconjoinable clauses (n=139)			9.6
<u>Twos</u>			
Total	40	1	2.5
Conjoinable	40	1	2.5
% Conjoinable clauses (n=40)			100
% Nonconjoinable clauses (n=0)			0
<u>Threes</u>			
Total	294	54	18.4
Conjoinable	266	54	20.3
% Conjoinable clauses (n=266)			90.5
% Nonconjoinable clauses (n=28)			9.5
<u>Fours</u>			
Total	807	211	26.2
Conjoinable	729	211	28.9
% Conjoinable clauses (n=729)			90.3
% Nonconjoinable clauses (n=78)			9.7
<u>Fives</u>			
Total	306	64	20.9
Conjoinable	273	64	23.4
% Conjoinable clauses (n=273)			89.2
% Nonconjoinable clauses (n=33)			10.8

Table 5.5

Semantic Classes of Conjunctions in
Children's Conversation

	<u>No.</u>	<u>%</u>
<u>All</u> -- n=389		
Additive	95	24.4
Adversative	91	23.4
Temporal	130	33.4
Causal	73	18.8
Sequential temporals	102	26.2
% of temporals		78.5
And (n=151)		
symmetric	94	62.3
asymmetric	57	37.8
<u>Threes</u> -- n=61		
Additive	13	21.3
Adversative	13	21.3
Temporal	26	42.6
Causal	9	14.8
Sequential temporals	25	41
% of temporals		96.2
And (n=28)		
symmetric	13	46.4
asymmetric	15	53.6
<u>Fours</u> -- n=249		
Additive	63	25.3
Adversative	62	24.9
Temporal	79	31.7
Causal	45	18.1
Sequential temporals	61	24.5
% of temporals		77.2
And (n=96)		
symmetric	62	64.6
asymmetric	34	35.4

Fives -- n=77

Additive	18	23.4
Adversative	16	20.8
Temporal	25	32.5
Causal	18	23.4
Sequential temporals	16	20.8
% of temporals		64
And (n=26)		
symmetric	18	69.2
asymmetric	8	30.8

Table 5.6

Syntactic Classes of Conjunctions in
Children's Conversation

	<u>No.</u>	<u>%</u>
<u>All</u> -- n=389		
1	7	1.8
2	15	3.9
3	80	20.6
4	287	73.8
Total Ps	87	22.4
Total Bs	302	77.6
<u>Threes</u> -- n=61		
1	0	0
2	1	1.6
3	9	14.8
4	51	83.6
Total Ps	9	14.8
Total Bs	52	85.3
<u>Fours</u> -- n=249		
1	6	2.4
2	8	3.2
3	49	19.7
4	186	74.7
Total Ps	55	22.1
Total Bs	194	77.9
<u>Fives</u> -- n=77		
1	1	1.3
2	6	7.8
3	21	27.3
4	49	63.6
Total Ps	22	28.6
Total Bs	55	71.4

Table 5.7**Conjunctions in All Children's Stories**

<u>All</u>	<u>No.</u>	<u>Freq./1000</u>
and (total)	269	70.79
and (symm.)	43	11.32
and (asymm.)	226	59.47
then	166	43.68
so	32	8.42
because	15	3.95
but	10	2.63
when	6	1.58
if	2	.53
as	1	.26
before	1	.26
except	1	.26
Total singles	503	132.37
Total words = 3800		
and then	115	30.26
so then	6	1.58
and when	2	.53
but then	2	.53
and if	1	.26
because if	1	.26
so as	1	.26
Total combinations	130	34.21
<u>Threes</u>		
and (total)	14	87.5
and (symm.)	1	6.25
and (asymm.)	13	81.25
then	6	37.5
so	1	6.25
Total singles	21	131.25
Total words = 160		
and then	6	37.5
Total combinations	6	37.5

Fours

and (total)	144	62.15
and (symm.)	29	12.52
and (asymm.)	115	49.63
then	83	35.82
so	21	9.06
because	12	5.18
but	9	3.88
when	5	2.16
if	2	.86
as	1	.43
before	1	.43

Total singles	278	119.98
Total words = 2317		

and then	52	22.44
and when	2	.86
but then	2	.86
so then	2	.86
and if	1	.43
because if	1	.43
but if	1	.43
so as	1	.43

Total combinations	62	26.76
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Fives

and (total)	111	83.9
and (symm.)	13	9.83
and (asymm.)	98	74.07
then	77	58.2
so	10	7.56
because	3	2.27
but	1	.76
except	1	.76
when	1	.76

Total singles	204	154.19
Total words = 1323		

and then	57	43.08
so then	4	3.02
and so	1	.76

Total combinations	62	46.86
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Table 5.8

Conjoined Clauses in All Children's Stories

	# <u>Clauses</u>	# <u>Conjoined</u>	% <u>Conjoined</u>
<u>All</u>			
Total	693	354	51.1
Conjoinable	614	354	57.7
% Conjoinable clauses (n=614)			88.6
% Nonconjoinable clauses (n=79)			11.4
<u>Threes</u>			
Total	24	15	62.5
Conjoinable	24	15	62.5
% Conjoinable clauses (n=24)			100
% Nonconjoinable clauses (n=0)			0
<u>Fours</u>			
Total	439	204	46.5
Conjoinable	383	204	53.3
% Conjoinable clauses (n=383)			87.2
% Nonconjoinable clauses (n=56)			12.8
<u>Fives</u>			
Total	230	135	58.7
Conjoinable	207	135	65.2
% Conjoinable clauses (n=207)			90
% Nonconjoinable clauses (n=23)			10

Table 5.9

Semantic Classes of Conjunctions in
All Children's Stories

	<u>No.</u>	<u>%</u>
<u>All</u> -- n=503		
Additive	43	8.6
Adversative	11	2.2
Temporal	400	79.5
Causal	49	9.7
Sequential temporals	392	77.9
% of temporals		98
And (n=269)		
symmetric	43	16
asymmetric	226	84
<u>Threes</u> -- n=21		
Additive	1	4.8
Adversative	0	0
Temporal	19	90.5
Causal	1	4.8
Sequential temporals	19	90.5
% of temporals		100
And (n=14)		
symmetric	1	7.1
asymmetric	13	92.9
<u>Fours</u> -- n=278		
Additive	29	10.4
Adversative	9	3.2
Temporal	205	73.7
Causal	35	12.6
Sequential temporals	198	71.2
% of temporals		96.6
And (n=144)		
symmetric	29	20.1
asymmetric	115	79.9

Fives -- n=204

Additive	13	6.4
Adversative	2	1
Temporal	176	86.3
Causal	13	6.4
Sequential temporals	175	85.8
% of temporals		99.4
And (n=111)		
symmetric	13	11.7
asymmetric	98	88.3

Table 5.10
Syntactic Classes of Conjunctions in
All Children's Stories

	<u>No.</u>	<u>%</u>
<u>All</u> -- n=503		
1	2	.4
2	33	6.6
3	23	4.6
4	445	88.5
Total Ps	25	5
Total Bs	478	95
<u>Threes</u> -- n=21		
1	0	0
2	1	4.8
3	0	0
4	20	95.2
Total Ps	0	0
Total Bs	21	100
<u>Fours</u> -- n=278		
1	2	.7
2	21	7.6
3	19	6.8
4	236	84.9
Total Ps	21	7.6
Total Bs	257	92.5
<u>Fives</u> -- n=204		
1	0	0
2	11	5.4
3	4	2
4	189	92.7
Total Ps	4	2
Total Bs	200	98

Table 5.11

Conjunctions in Children's Free Stories

<u>All</u>	<u>No.</u>	<u>Freq./1000</u>
and (total)	85	54.56
and (symm.)	19	12.19
and (asymm.)	66	42.36
then	47	30.17
so	17	10.91
because	7	4.49
but	6	3.85
when	5	3.21
if	2	1.28
as	1	.64
before	1	.64
except	1	.64
Total singles	172	110.39
Total words = 1558		
and then	31	19.89
so then	3	1.93
and when	2	1.28
and if	1	.64
because if	1	.64
but then	1	.64
so as	1	.64
Total combinations	40	25.67
<u>Threes</u>		
and (total)	7	67.31
and (symm.)	1	9.62
and (asymm.)	6	57.69
then	3	28.85
so	1	9.62
Total singles	11	105.77
Total words = 104		
and then	3	28.85
Total combinations	3	28.85

Fours

and (total)	53	49.26
and (symm.)	17	15.79
and (asymm.)	36	33.46
then	28	26.02
so	13	12.08
because	6	5.58
but	5	4.65
when	4	3.72
if	2	1.86
as	1	.93
before	1	.93

Total singles	113	105.02
Total words = 1076		

and then	15	13.94
and when	2	1.86
so then	2	1.86
and if	1	.93
because if	1	.93
but then	1	.93
so as	1	.93

Total combinations	23	21.38
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Fives

and (total)	25	66.14
and (symm.)	1	2.65
and (asymm.)	24	63.49
then	16	42.33
so	3	7.94
because	1	2.65
but	1	2.65
except	1	2.65
when	1	2.65

Total singles	48	126.98
Total words = 378		

and then	13	34.39
so then	1	2.65

Total combinations	14	37.04
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Table 5.12

Conjunctions in Children's Prompted Stories

<u>All</u>	<u>No.</u>	<u>Freq./1000</u>
and (total)	184	82.07
and (symm.)	24	10.7
and (asymm.)	160	71.37
then	119	53.08
so	15	6.69
because	8	3.57
but	4	1.78
when	1	.45
Total singles	331	147.64
Total words = 2242		
and then	84	37.47
so then	3	1.34
and so	1	.45
but if	1	.45
but then	1	.45
Total combinations	90	40.14
<u>Threes</u>		
and (asymm.)	7	125
then	3	53.57
Total singles	10	178.57
Total words = 56		
and then	3	53.57
Total combinations	3	53.57

Fours

and (total)	91	73.33
and (symm.)	12	9.67
and (asymm.)	79	63.66
then	55	44.32
so	8	6.45
because	6	4.84
but	4	3.22
when	1	.81

Total singles	165	132.96
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Total words = 1241

and then	37	29.82
but if	1	.81
but then	1	.81

Total combinations	39	31.43
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Fives

and (total)	86	91.01
and (symm.)	12	12.69
and (asymm.)	74	78.31
then	61	64.55
so	7	7.41
because	2	2.12

Total singles	156	165.08
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Total words = 945

and then	44	46.56
so then	3	3.18
and so	1	1.06

Total combinations	48	50.79
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Table 5.13

Conjoined Clauses in Children's Free Stories

	# <u>Clauses</u>	# <u>Conjoined</u>	% <u>Conjoined</u>
<u>All</u>			
Total	291	125	43
Conjoinable	246	125	50.8
% Conjoinable clauses (n=246)			84.5
% Nonconjoinable clauses (n=45)			15.5
<u>Threes</u>			
Total	15	8	53.3
Conjoinable	15	8	53.3
% Conjoinable clauses (n=15)			100
% Nonconjoinable clauses (n=0)			0
<u>Fours</u>			
Total	202	84	41.6
Conjoinable	167	84	50.3
% Conjoinable clauses (n=167)			82.7
% Nonconjoinable clauses (n=35)			17.3
<u>Fives</u>			
Total	74	33	44.6
Conjoinable	64	33	51.6
% Conjoinable clauses (n=64)			86.5
% Nonconjoinable clauses (n=10)			13.5

Table 5.14

Conjoined Clauses in Children's Prompted Stories

	# <u>Clauses</u>	# <u>Conjoined</u>	% <u>Conjoined</u>
<u>All</u>			
Total	402	229	57
Conjoinable	368	229	62.2
% Conjoinable clauses (n=368)			91.5
% Nonconjoinable clauses (n=34)			8.5
<u>Threes</u>			
Total	9	7	77.8
Conjoinable	9	7	77.8
% Conjoinable clauses (n=9)			100
% Nonconjoinable clauses (n=0)			0
<u>Fours</u>			
Total	237	120	50.6
Conjoinable	216	120	55.6
% Conjoinable clauses (n=216)			91.1
% Nonconjoinable clauses (n=21)			8.9
<u>Fives</u>			
Total	156	102	65.4
Conjoinable	143	102	71.3
% Conjoinable clauses (n=143)			91.7
% Nonconjoinable clauses (n=13)			8.3

Table 5.15

Semantic Classes of Conjunctions in
Children's Free Stories

	<u>No.</u>	<u>%</u>
<u>All</u> -- n=172		
Additive	19	11.1
Adversative	7	4.1
Temporal	120	69.8
Causal	26	15.1
Sequential temporals	113	65.7
% of temporals		94.2
And (n=85)		
symmetric	19	22.4
asymmetric	66	77.7
<u>Threes</u> -- n=11		
Additive	1	9.1
Adversative	0	0
Temporal	9	81.8
Causal	1	9.1
Sequential temporals	9	81.8
% of temporals		100
And (n=7)		
symmetric	1	14.3
asymmetric	6	85.7
<u>Fours</u> -- n=113		
Additive	17	15
Adversative	5	4.4
Temporal	70	62
Causal	21	18.6
Sequential temporals	64	56.6
% of temporals		91.4
And (n=53)		
symmetric	17	32.1
asymmetric	36	67.9

Fives -- n=48

Additive	1	2.1
Adversative	2	4.2
Temporal	41	85.4
Causal	4	8.3

Sequential temporals	40	83.3
% of temporals		97.6

And (n=25)

symmetric	1	4
asymmetric	24	96

Table 5.16

Semantic Classes of Conjunctions in
Children's Prompted Stories

	<u>No.</u>	<u>%</u>
<u>All</u> -- n=331		
Additive	24	7.3
Adversative	4	1.2
Temporal	280	84.6
Causal	23	7
Sequential temporals	279	84.3
% of temporals		99.6
And (n=184)		
symmetric	24	13
asymmetric	160	87
<u>Fours</u> -- n=165		
Additive	12	7.3
Adversative	4	2.4
Temporal	135	81.8
Causal	14	8.5
Sequential temporals	134	81.2
% of temporals		99.3
And (n=91)		
symmetric	12	13.2
asymmetric	79	86.8
<u>Fives</u> -- n=156		
Additive	12	7.7
Adversative	0	0
Temporal	135	86.5
Causal	9	5.8
Sequential temporals	135	86.5
% of temporals		100
And (n=86)		
symmetric	12	14
asymmetric	74	86.1

Table 5.17

Conjunctions in Children's Game Explanations

<u>All</u>	<u>No.</u>	<u>Freq./1000</u>
and (total)	25	58.82
and (symm.)	14	32.94
and (asymm.)	11	25.88
but	4	9.41
if	4	9.41
then	4	9.41
because	3	7.06
when	3	7.06
so	2	4.71
before	1	2.35
except	1	2.35
or else	1	2.35
till	1	2.35
Total singles	49	115.29
Total words = 425		
and then	3	7.06
and when	2	4.71
but if	2	4.71
and if	1	2.35
Total combinations	8	18.82
<u>Threes</u>		
because	3	90.91
Total	3	90.91
Total words = 33		

Fours

and (total)	14	59.07
and (symm.)	10	42.19
and (asymm.)	4	16.88
if	4	16.88
then	3	12.66
but	2	8.44
so	1	4.22
till	1	4.22

Total singles	25	105.49
Total words = 237		

and then	2	8.44
but if	2	8.44
and if	1	4.22

Total combinations	5	21.09
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Fives

and (total)	11	70.97
and (symm.)	4	25.81
and (asymm.)	7	45.16
when	3	19.36
but	2	12.9
before	1	6.45
except	1	6.45
or else	1	6.45
so	1	6.45
then	1	6.45

Total singles	21	135.48
Total words = 155		

and when	2	12.9
and then	1	6.45

Total combinations	3	19.36
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Table 5.18

Conjoined Clauses in Game Explanations

	# <u>Clauses</u>	# <u>Conjoined</u>	% <u>Conjoined</u>
<u>All</u>			
Total	81	36	44.4
Conjoinable	75	36	48
% Conjoinable clauses (n=75)			92.6
% Nonconjoinable clauses (n=6)			7.4
<u>Threes</u>			
Total	6	3	50
Conjoinable	5	3	60
% Conjoinable clauses (n=5)			83.3
% Nonconjoinable clauses (n=1)			16.7
<u>Fours</u>			
Total	50	18	36
Conjoinable	48	18	37.5
% Conjoinable clauses (n=48)			96
% Nonconjoinable clauses (n=2)			4
<u>Fives</u>			
Total	25	15	60
Conjoinable	22	15	68.2
% Conjoinable clauses (n=22)			88
% Nonconjoinable clauses (n=3)			12

Table 5.19

Semantic Classes of Conjunctions in
Children's Game Explanations

	<u>No.</u>	<u>%</u>
<u>All</u> -- n=49		
Additive	15	30.6
Adversative	5	10.2
Temporal	20	40.8
Causal	9	18.4
Sequential temporals	15	30.6
% of temporals		75
And (n=25)		
symmetric	14	56
asymmetric	11	44
<u>Fours</u> -- n=25		
Additive	10	40
Adversative	2	8
Temporal	8	32
Causal	5	20
Sequential temporals	7	28
% of temporals		87.5
And (n=14)		
symmetric	10	71.4
asymmetric	4	28.6
<u>Fives</u> -- n=21		
Additive	5	23.8
Adversative	3	14.3
Temporal	12	57.1
Causal	1	4.8
Sequential temporals	8	38.1
% of temporals		66.7
And (n=11)		
symmetric	4	36.4
asymmetric	7	63.6

Table 5.20

Syntactic Classes of Conjunctions in
Children's Game Explanations

	<u>No.</u>	<u>%</u>
<u>All</u> -- n=49		
1	4	8.2
2	3	6.1
3	8	16.3
4	34	69.4
Total Ps	12	24.5
Total Bs	37	75.5
<u>Fours</u> -- n=25		
1	4	16
2	1	4
3	1	4
4	19	76
Total Ps	5	20
Total Bs	20	80
<u>Fives</u> -- n=21		
1	0	0
2	2	9.5
3	4	19.1
4	15	71.4
Total Ps	4	19.1
Total Bs	17	81

Table 5.21

Conjunctions in Adults' Question Sessions

	<u>No.</u>	<u>Freq./1000</u>
and (total)	39	15.07
and (symm.)	21	8.11
and (asymm.)	18	6.96
because/'cause	73	28.21
then	12	4.64
so	9	3.48
when	8	3.09
or	3	1.16
but	2	.77
if	2	.77
after	1	.39
as	1	.39
since (caus.)	1	.39
unless	1	.39
while	1	.39
Total singles	153	59.12
Total words = 2588		
and then	4	1.55
and because	2	.77
because when	1	.39
so when	1	.39
Total combinations	8	3.09

Table 5.22

Conjunctions in Children's Question Sessions

<u>All</u>	<u>No.</u>	<u>Freq./1000</u>
and (total)	37	14.55
and (symm.)	16	6.29
and (asymm.)	21	8.26
because	169	66.46
then	11	4.33
so	5	1.97
but	3	1.18
when	2	.79
after	1	.39
till	1	.39
Total singles	229	90.05
Total words = 2543		
and then	6	2.36
because when	1	.39
but then	1	.39
Total combinations	8	3.15
<u>Twos</u>		
	0	0
Total words = 59		
<u>Threes</u>		
and (total)	6	10.55
and (symm.)	4	7.03
and (asymm.)	2	3.52
because	48	84.36
but	1	1.76
when	1	1.76
Total	56	98.42
Total words = 569		

Fours

and (total)	20	16.1
and (symm.)	8	6.44
and (asymm.)	12	9.66
because	83	66.83
then	5	4.03
so	3	2.42
after	1	.81
but	1	.81
till	1	.81
when	1	.81
Total singles	115	92.59
Total words = 1242		
and then	4	3.22
because when	1	.81
Total combinations	5	4.03

Fives

and (total)	11	16.35
and (symm.)	4	5.94
and (asymm.)	7	10.4
because	38	56.46
then	6	8.92
so	2	2.97
but	1	1.49
Total singles	58	86.18
Total words = 673		
and then	2	2.97
but then	1	1.49
Total combinations	3	4.46

Table 5.23

Conjoined Clauses in Adults' Question Sessions

	# <u>Clauses</u>	# <u>Conjoined</u>	% <u>Conjoined</u>
Total	470	136	28.9
Conjoinable	326	136	41.7
% Conjoinable clauses (n=326)			69.4
% Nonconjoinable clauses (n=144)			30.6

Table 5.24

Conjoined Clauses in Children's Question Sessions

	# <u>Clauses</u>	# <u>Conjoined</u>	% <u>Conjoined</u>
<u>All</u>			
Total	510	180	35.3
Conjoinable	447	180	40.3
% Conjoinable clauses (n=447)			87.7
% Nonconjoinable clauses (n=63)			12.4
<u>Twos</u>			
Total	10	0	0
Conjoinable	10	0	0
% Conjoinable clauses (n=10)			100
% Nonconjoinable clauses (n=0)			0
<u>Threes</u>			
Total	112	34	30.4
Conjoinable	101	34	33.7
% Conjoinable clauses (n=101)			90.2
% Nonconjoinable clauses (n=11)			9.8
<u>Fours</u>			
Total	249	94	37.8
Conjoinable	220	94	42.7
% Conjoinable clauses (n=220)			88.4
% Nonconjoinable clauses (n=29)			11.7
<u>Fives</u>			
Total	139	52	37.4
Conjoinable	116	52	44.8
% Conjoinable clauses (n=116)			83.5
% Nonconjoinable clauses (n=23)			16.6

Table 5.25

Semantic Classes of Conjunctions in
Adults' Question Sessions

	<u>No.</u>	<u>%</u>
n=153		
Additive	24	15.7
Adversative	3	2
Temporal	41	26.8
Causal	85	55.6
Sequential temporals	30	19.6
% of temporals		73.2
And (n=39)		
symmetric	21	53.9
asymmetric	18	46.2

Table 5.26

Semantic Classes of Conjunctions in
Children's Question Sessions

	<u>No.</u>	<u>%</u>
<u>All</u> -- n=229		
Additive	16	7
Adversative	3	1.3
Temporal	36	15.7
Causal	174	76
Sequential temporals	32	14
% of temporals		88.9
And (n=37)		
symmetric	16	43.2
asymmetric	21	56.8
<u>Threes</u> -- n=56		
Additive	4	7.1
Adversative	1	1.8
Temporal	3	5.4
Causal	48	85.7
Sequential temporals	2	3.6
% of temporals		66.7
And (n=6)		
symmetric	4	66.7
asymmetric	2	33.3
<u>Fours</u> -- n=115		
Additive	8	7
Adversative	1	.9
Temporal	20	17.4
Causal	86	74.8
Sequential temporals	17	14.8
% of temporals		85
And (n=20)		
symmetric	8	40
asymmetric	12	60

Fives -- n=58

Additive	4	6.9
Adversative	1	1.7
Temporal	13	22.4
Causal	40	69
Sequential temporals	13	22.4
% of temporals		100
And (n=11)		
symmetric	4	36.4
asymmetric	7	63.6

Table 5.27

Syntactic Classes of Conjunctions in
Adults' Question Sessions

	<u>No.</u>	<u>%</u>
n=153		
1	2	1.3
2	9	5.9
3	86	56.2
4	56	36.6
Total Ps	88	57.5
Total Bs	65	42.5

Table 5.28

Syntactic Classes of Conjunctions in
Children's Question Sessions

	<u>No.</u>	<u>%</u>
<u>All</u> -- n=229		
1	0	0
2	5	2.2
3	173	75.6
4	51	22.3
Total Ps	173	75.6
Total Bs	56	24.5
<u>Threes</u> -- n=56		
1	0	0
2	0	0
3	49	87.5
4	7	12.5
Total Ps	49	87.5
Total Bs	7	12.5
<u>Fours</u> -- n=115		
1	0	0
2	3	2.6
3	86	74.8
4	26	22.6
Total Ps	86	74.8
Total Bs	29	25.2
<u>Fives</u> -- n=58		
1	0	0
2	2	3.5
3	38	65.5
4	18	31
Total Ps	38	65.5
Total Bs	20	34.5