

RELATIVE CLAUSES IN CHILD LANGUAGE, PIDGINS AND CREOLES

Suzanne Romaine

INTRODUCTION

It has been claimed that pidgins and/or creoles share a number of features in common with child language. The comparisons which have been made relate both to similarities in particular linguistic structures found in child and pidgin/creole grammars and to similarities in process, e.g. developmental changes which characterise acquisitional stages. Perhaps one of the most explicit parallels at the process level is Bickerton's (1977a:49, 54-55) claim: 'Pidginization is second language learning with restricted input and creolization is first language learning with restricted input.'

If one takes a broad view of acquisition, it is not difficult to see why it is attractive to compare child language, pidgins and creoles. One could argue simply that in so far as all cases of language acquisition have to do with changes in developing systems in real time, there must be some similarities, and the parallelisms have, not surprisingly, been extended to include historical change too (cf. e.g. Slobin 1977 and Givón 1979). The crucial question however is what the significance of such similarities is – and indeed, whether the differences outweigh the similarities. Again, it is perhaps Bickerton (1981), who has made the strongest claims in arguing that there seems to be only one way of building a language. In child language acquisition and creolisation we see innate language universals at work.

Nevertheless, there are many problems which arise in making sweeping comparisons (cf. Aitchison 1983a:7 for discussion). Perhaps the most serious one is how to define the phenomena which are being compared. The term 'pidgin' and 'creole' and 'pidginisation' and 'creolisation' are used to refer to a disparate range of entities and processes.

The difficulties in identifying a set of formal structural characteristics which are uniquely associated with either a pidgin or a creole are well known. Most have therefore adopted a social or functional definition of terms 'pidgin' and 'creole', e.g. Todd (1974). A pidgin is no one's first language. It is used by groups of people who have no common language for certain limited communicative purposes. A creole is a pidgin which has become a first language. Given the different stages in the life cycle of a pidgin at which creolisation can take place, (cf. Mühlhäusler 1980), there is bound to be some overlap in the structural characteristics of e.g. an incipient creole and an expanded pidgin. I think it is useful to make a further distinction between processes and their outcomes. The entities called 'pidgins' and 'creoles' are salient instances of the processes which give rise to them.

Papers in pidgin and creole linguistics No.4, 1-23.
Pacific Linguistics, A-72, 1985.

© Suzanne Romaine

Apart from these problems in defining the relevant entities to be compared, there is the additional issue as to whether pidgins and creoles should be compared to second and first language acquisition respectively. As Aitchison (1983a:7) points out, this depends on the status of the claim that there is a 'critical period' for acquiring language. This is open to question (cf. Krashen 1973-74).

1. RELATIVISATION

The relative clause is an interesting construction to choose in order to see whether there are any parallels between child language, pidgins and creoles. There are a number of reasons why this is true. Firstly, relative clauses have received extensive discussion in the psycholinguistic and child development literature; they have also been widely studied cross-linguistically. Secondly, the finding that relative clauses develop in the later stages of acquisition is paralleled by the finding that they are generally lacking in pidgins (and they are also comparatively late diachronic developments in the history of some languages).

The late development of relatives in child language has been mainly attributed to the alleged processing difficulties posed by their syntactic complexity. There is some evidence which suggests that there are substantial cross-linguistic differences in rate of acquisition, which have to do with the way in which the construction is encoded in particular languages.¹ This brings me to the problem of defining the notion of relative clause. It is difficult to give an inclusive, unique and universal set of defining properties shared by all the constructions which syntacticians have discussed under the heading of 'relative clause'. Keenan and Comrie (1977:63-64) for example, define it as follows:

We consider any syntactic object to be a relative clause if it specifies a set of objects ... in two steps: a larger set is specified, called the *domain* of relativization, and then restricted to some subset of which a certain sentence is true. The domain of relativization is expressed in the surface structure by the head NP, and the restricting sentence by the restricting clause.²

Lehmann (1983), however, identifies three constituent operations, which may be present to differing degrees and combined in different ways to construct various types of relative clauses:

- i. subordination (nominalisation)
- ii. attribution
- iii. creation of an empty slot in the relative clause.

He sees each of these operations as scalar, i.e. they vary along a continuum. As far as subordination or nominalisation is concerned, the scale may range from a subordinate sentence to a noun, i.e. the transformation of a predicative construction into the category of nominal. For Lehmann subordination includes embedding and conjunction: nominalisation implies the possibility of embedding and embedding implies subordination. Although subordination is taken to be a prerequisite for relativisation, the operation of having a subordinate clause function as a nominal of the matrix sentence means different things in different languages. In English, for example, a relative clause is embedded as a modifier in an NP, where the embedded and matrix sentence share an identical nominal constituent, which is realised as a relative marker or pronoun (e.g. who, which,

that, etc.). Subordination may or may not be marked. If it is not marked, the resulting construction may not be recognisable as a relative. If subordination is marked, it may be done through the use of a particle or a pronoun, which fills the empty slot created via the process of relativisation.

The extent to which a relative clause fulfills any of these three criteria reflects the degree to which that particular function is grammaticalised. Some languages may have devices which accomplish all these functions, but no combination of the three is grammaticalised. In which case, the language would have no relative clauses.

As far as the evolution of relative clauses in language history and pidgins and creoles is concerned, there are a number of possible ways in which languages can come to have relative clauses. In some languages, as far as we can tell, there have always been relative clauses and one can identify constructions in the modern language which are continuations or renewals in some sense of constructions which existed in earlier stages. A language may 'create' a relative clause from a related construction; that is, an old form may come to serve a new function. Through expansion a simple participle or an attributive adjective may increasingly gain sentence status. Another route to relativisation may be via the grammaticalisation of an anaphoric relationship between two independent successive sentences so that either the first or the second becomes subordinate.³ I will argue here that it is the exploitation of this route of grammaticalisation which the child's acquisition of relative clauses has in common with the development of relative clauses in pidgin and creoles. I will look first at the process of children's acquisition of relatives.

2. CHILDREN'S ACQUISITION OF RELATIVE CLAUSES IN ENGLISH

Most of what I will say about children's acquisition of relative clauses will be based on English-speaking children, and most of the data I will discuss come from an earlier study I did of school children in Edinburgh (cf. Romaine 1975 and Romaine 1984).

For the moment I will define relativisation as a syntactic process whereby a sentence becomes embedded as a modifier in an NP, where the embedded sentence and main (or matrix) sentence share an identical nominal constituent, which is realised as a relative marker or pronoun (e.g. *who*, *which*, *that*, etc.). The following example, taken from my study of Edinburgh schoolchildren, was produced by a 10-year-old boy:

- (1) The lassie was remembering about things [that had happened].

The matrix sentence or main clause is: *The lassie was remembering about things*, and the relative clause, enclosed in brackets, is: *that had happened*. The relative clause is considered to be a modifier of or embedded within the noun phrase *things*, which is co-referential with the relative marker *that*. I will refer to that as a *marker* to distinguish it from what traditional grammarians call relative pronouns, e.g. *who*, *whom*, *whose*, *which*. The choice among these in English relative clauses is determined by whether or not the antecedent or co-referential noun phrase in the matrix sentence is human, and the function of the relative in the relative clause, e.g. subject, object, etc. The marker *that* is invariant and not sensitive to these features of the antecedent, while the WH-forms of the relative are.

In example (1) we can identify two factors which have been cited as contributory to the complexity of these constructions. The first of these is what is referred to as embeddedness; that is, distance of the relative clause from the syntactic position occupied by the antecedent in the main clause. In this particular sentence there is 'no distance'; in other words, the relative clause immediately follows the noun phrase in the matrix sentence which serves as the direct object. We can break it down into its constituents as follows:

- (2) The lassie was remembering about things [that had happened]. (OS)
 NP1 V [NP2] [NP3] V
 object subject

The second factor to be considered has been called *focus*; that is, the grammatical function or syntactic position of the relativised noun phrase in the relative clause. In this sentence the relative occupies subject position. I will use the notation OS to refer to this type of relative clause, where O represents object and S subject position. By varying these two parameters, embeddedness and focus, we can also have relative clauses of the type SS, OO, and SO. The first member of each of these pairs stands for the syntactic position occupied by the head NP in the matrix S, and the second for the syntactic position occupied by the relativised NP in the relative clause. Examples from the Edinburgh data illustrating each type are given below, each with its constituent structure:

- (3) That person [that hasnae scored] goes out. (SS)
 [NP1] [NP2] V V
 subject subject
- (4) Ken they carties [that you pull behind you] ? (OO)
 V [NP1] [NP2] V
 object object
- (5) The one [that I like best] is kick the can. (SO)
 [NP1] [NP2] V V
 subject object

It has been proposed that there is a relation between ease of processing and the order in which children acquire these four types of relative clauses. It is not hard to imagine why researchers have claimed that relativisation on the object NP of the matrix sentence is easier than relativisation on the subject because the former still entails (in terms of surface structure) only paratactic conjunction of sentences rather than the insertion of one within the other (i.e. embedding), as in the case of relativisation on the subject. We should expect then to find that children are able to process the OO and OS types earlier and with greater accuracy than the SS and SO types. This would follow from the hypothesis that children are using a parsing strategy of the type proposed by Slobin, where sequences of NVN are interpreted as subject verb object (SVO).

This strategy would yield the correct interpretation for an OS relative clause, but not for the other types. The problem posed by subject embedded relative clauses is that the relative clause interrupts the linear processing of constituents, i.e. it is embedded in a sequence like NP1 [NP3 V NP4] V NP2 where either NP3 or NP4 is the position relativised within the relative clause.

A number of experiments have been conducted to test children's ability to understand relative clauses. In most of these, children were asked either to

repeat various types of relative clauses or to manipulate toys. For example, Tavakolian (1977) and De Villiers et al (1979) asked children to make toys act out the sequence of events in sentences such as:

(6) The dog stands on the horse [that the giraffe jumps over]. (OO)

In order to score a correct interpretation the child must be able to comprehend the roles of agent and patient correctly.

The experimental literature has produced conflicting findings. The results of some of the major investigations are summarised in Table 1.

Perception experiments:			
Sheldon			SS > OO > OS > SO
Tavakolian			SS > OO > OS > SO
De Villiers et al			OS > SS > OO > SO
Production:			
Edinburgh children	10		OS > OO > SS > SO
	8		OS > OO > SS > SO
	6		OO > OS > SO > SS
Average			
(for Edinburgh children			OO > OS > SS > SO

I have included in the table the results for the production of relative clauses by three age groups of the Edinburgh school children. The last line shows the hierarchy obtained without regard to age group. It can be seen, however, that this trend is not operative within the individual age groups. The marking of OO and OS is reversed for the ten- and eight-year-olds, and the marking of SS and SO for the six-year-olds. The factor of embeddedness is clearly the one which carries the most weight, with object relative clauses being greatly preferred over subject ones. The effect of focus, which is a much weaker factor, results in slightly fewer relative clauses being produced on NPs which serve as the object of their clauses. The effects of focus and embeddedness can be seen for each age group in Table 2.

Age	Focus S > O				Embeddedness O > S			
	subject focus		object focus		subject embedded		object embedded	
	(SS + OS)		(SO + OO)		(SS + SO)		(OS + OO)	
	N	%	N	%	N	%	N	%
10	41	22	30	16	20	11	51	28
8	27	15	22	12	9	5	40	22
6	26	14	37	20	24	13	39	21
Total	94	51	89	49	53	29	130	71

The interaction between age and focus is statistically significant. As far as the factor of embeddedness is concerned, however, age is not significant.

I will consider now the extent to which the production data shed light on children's operating principles, and in particular, what answer they suggest to the question why there should be differences between the age groups. I will argue that the data show the evolution of relative clause formation rules. In order to trace the development from the child to adult system, we will need to take a brief look at adult relative clause formation strategies. The most detailed work in this area comes from cross-linguistic research done by Keenan and Comrie (1977, 1979) who have made some interesting predictions about the types of relative clause formation strategies possible in languages. After examining a wide cross-section of different types of languages, they found that they did not vary randomly with respect to the syntactic positions of the NP which could be relativised. They postulated the existence of an accessibility hierarchy which predicted constraints on the positions in which relative clauses could appear, as given below:

Keenan-Comrie Accessibility Hierarchy

Subject > Direct Object > Indirect Object > Oblique > Genitive > Object of comparison

The two most important predictions made by Keenan and Comrie to be considered here are:

1. The frequency with which NPs in certain syntactic positions are relativised in a language is in accordance with their ordering in the case hierarchy; i.e. subject NPs are most frequently and objects of comparison least frequently relativised.
2. The order of cases in the hierarchy is correlated with ease of relativisation, i.e. subject is the easiest position to relativise.

The first of Keenan and Comrie's predictions about accessibility relates to my previous discussion of the factor of focus, i.e. the position occupied by the relative in the relative clause. According to Keenan and Comrie's hypothesis, subject relatives (i.e. OS and SS) should be more frequent than object relatives (OO and SO) (cf. the results of De Villiers et al (1979)). This prediction is supported when we consider the total number of relative clauses produced by the Edinburgh children. This can be seen in Table 3.

A few comments are necessary. There were no indirect object relatives in the sample; that is, a relative clause in which the syntactic function of the relative is that of indirect object e.g.

(7a) The man [THAT I gave the book to].

(7b) The man [TO WHOM I gave the book].

The term *oblique* is used to refer to relatives in whose underlying structure the co-referential NP functions as the object of a preposition, e.g. the house that I used to live in. There are two types of oblique relative constructions: stranded and shifted. These terms refer to the placement of the preposition in relation to its object. If the preposition is separated from its relative marker or pronoun, as it is in (7a), then it is stranded. The term 'shifted' refers to a relative clause in which the preposition has been fronted along with the co-referential NP to the beginning of the relative clause, e.g. the house in which I live. The fact that WH relatives behave differently to that in oblique constructions is one of the arguments used by syntacticians to justify the treatment of that as a non-pronominal relativiser. Oblique relatives marked by that cannot undergo stranding. Sentences like (8) are ungrammatical.

(8) The house in that he lived.

Table 3: Relative markers used by Edinburgh school children

Position:		Subject	Object	Oblique	Locative	Temporal	Genitive	Total
Age 10	WH ¹	13	2		1			16
	that	25	10	3			1	38
	∅	3	11	4				18
		(41)	(23)	(7)	(1)		(1)	(73)
Age 8	WH ²	5			6			11
	that	21	1	1	1			24
	∅	1	16	4		3		24
		(27)	(17)	(5)	(7)	(3)		(59)
Age 6	WH ³	2	2	1	1			6
	that	21	3	1				25
	∅	3	28	2		5		38
		(26)	(33)	(4)	(1)	(5)		(69)
Total		94	73	16	9	8	1	201

¹WH forms include: who = 11; which = 1; what = 1 in subject position; what = 2 in object position; where = 1 in locative position.

²WH forms include: who = 2; what = 3 in subject position; where = 4 and what = 2 in locative position.

³WH forms include: who = 2 in subject position; who = 1, what = 1 in object position; where = 1 in locative position; what = 1 in oblique position.

WH pronouns on the other hand can occur in both stranded and shifted constructions as in (9) and (10).

(9) The house in which he lived.

(10) The house which he lived in.

If that had the same syntactic status as the WH pronouns, we would expect them to behave similarly. We will see further evidence of the different nature of that later.

The categories of temporal and locative were included here, although they are not strictly speaking syntactic positions on a par with the others in the case hierarchy. There seems to be no general agreement among syntacticians with regard to the status of adverbs of time and place when used in a relativising function. Examples of what I will refer to as temporal and locative relatives are:

(11) Locative: I've watched a horror film where there's a big giant.

(12) Temporal: The first time [that I tried it] I liked it.

I have included clauses of this type in the category of relative clauses because they participate in a pattern of variation similar to the other types of relative clauses; that is, they may be introduced by WH forms like where, when, by that or by no marker at all. Only cases in which there is a nominal element which can be understood as co-referential with the temporal or locative marker

are included here. In some cases locative relatives can be thought of as having some similarity to oblique relatives, as in the example:

(13) That's the place [WHERE I got my fishtank frae].

Locative and temporal relatives are also sometimes paraphrasable by oblique relatives, e.g.

(14) I like the one [WHAT Tom plays a trick on Jerry].

This sentence might be paraphrased as:

(15) I like the one [WHERE Tom plays a trick on Jerry].

(16) I like the one [IN WHICH Tom plays a trick on Jerry].

The Edinburgh children use what, where and that in relatives of this type.

There was only one example of a genitive relative construction in the Edinburgh data, produced by a 10-year-old boy:

(17) The person [THAT'S foot is touched] .

In modern standard English the only permissible construction in this case would be whose, which is marked for genitive case, and is used with personal human antecedents. The fact that Scots uses a form of that to mark relativisation on a genitive NP reflects its historical development (cf. Romaine 1982). Although Scots possesses the option of using whose to relativise genitive NPs, it tends to favour the alternative strategy of using that's, which is otherwise invariant in other varieties of English; or it uses a pronoun retaining strategy, e.g. the person that his foot is touched. These two alternative strategies permit case marking on the lower positions of the case hierarchy. In general, the use of WH pronouns as relatives is very infrequent in Scots; the most commonly used one is that or often no marker appears at all.

I have already noted some of the constraints which affect the choice of relatives according to features of the antecedent in particular syntactic positions (cf. Quirk et al 1972:867 for further details).

The Edinburgh schoolchildren tend to use that and \emptyset roughly equally in preference to WH, although there are some important developmental trends in evidence here. Limber (1973), who studied the development of complex sentences in preschool children, found that the first relative clauses involved no relative pronouns; later that is used. As far as the use of WH relatives is concerned, only the subject form who is used; the inflected forms whom and whose never appear. We can see a clear progression from the six- to 10-year-olds, which is characterised by increasingly less reliance on the \emptyset strategy, and a correspondingly greater increase in the use of WH and that. Overall, however, even in the 10-year-old group, the WH strategy is not very frequent; that is the preferred relativiser. These findings are well in line with the local adult norms (cf. Romaine 1982).

We can say then that part of the process of the acquisition of relative clauses involves not a wholesale qualitative shift from one strategy to another. In other words it isn't the case that children lose a 'primitive' rule or strategy which juxtaposes clauses without any formal mark of their relation. English, unlike French for example, allows relativisation by deletion and the deletion strategy is commonly used by adults. Acquiring English relative clauses involves adding other strategies, i.e. WH and that. This involves some decrease in the frequency with which the \emptyset strategy is employed, but not in its loss, not even in subject position.

There are some further comments to make about the kinds of relative clause formation strategies used by these Edinburgh children. Some of the examples do not fit neatly into the typology established so far in the discussion. Earlier I defined relativisation as a process of embedding in which a relative clause is embedded in a matrix clause and there is a relation or co-reference between an NP in the matrix and an NP in the relative clause. Example (18), which illustrates oblique relativisation, is such a case.

(18) Things [what you sit on] they go.

It can be seen that the relationship between these two clauses is not quite the same as in the other examples I have cited so far. The use of the pronoun *they* to mark the subject slot is in a sense redundant because *things* already serves this function. The NPs *things* and *they* are co-referential, just as the relative marker *what* is also co-referential with *things*. The term *resumptive*, *shadow* or *copy pronoun* is used to refer to a pronoun like *they*.⁴ Another example of a genitive relative which I gave previously (but which did not actually occur in the data) illustrates a similar phenomenon.

(19) The person [THAT HIS foot is touched].

This time the resumptive pronoun is marked for genitive or possessive case since this is the function it serves in the relative clause. Furthermore, it sometimes happens that the resumptive element is a full NP and not a pronoun, as in (20).

(20) Then whoever THE PERSON [THAT'S he] catches first
THAT PERSON'S he in the next game. (10-year-old boy)

In this sentence that person is co-referential with the NP *the person*, as is the relative marker *that*. There were 15 instances in which shadows or resumptives were used by the Edinburgh children. Most of these cases (N=13) were like the two sentences above, (19) and (20), where a resumptive pronoun occurs in subject position of the matrix clause immediately following a relative clause in subject position. The other two cases were like (21) where the shadow appears within the relative clause itself to mark the position of the relativised NP.

(21) but the ones [\emptyset you can put pounds and notes on IT]
(8-year-old boy)

(22) That man [who Mickey Mouse was putting]
Mickey Mouse [who was putting HIM upside down].
(6-year-old girl)

The first one of these has a shadow pronoun as the object of a preposition; or in other words, it appears in the slot which would have been occupied by a relative pronoun or marker. The prototypical relative clause in this syntactic position would have been either (23), (24) or (25).

(23) but the ones [on which you can put pounds and notes]

(24) but the ones [which you can put pounds and notes on]

(25) but the ones [that you can put pounds and notes on]

Since the child has used a zero strategy of relativisation in which there is no overt relativiser to indicate the case relation of the relativised NP, the pronoun *it* marks its slot. The second example is slightly more complicated to explain. The girl appears to be hesitating between two constructions, e.g.

- i. The man [who Mickey Mouse was putting upside down].
- ii. Mickey Mouse was putting the man upside down.

What results is a conflation of the two, with a shadow pronoun appearing in direct object slot, which is the syntactic position she was trying to relativise initially.

We can think of these two additional types of relative clauses as alternative strategies to the ones we've already discussed. It remains to be seen, however, what role they play in the child's syntactic development and what implication they have when seen in terms of the Keenan-Comrie accessibility hierarchy and the perceptual hierarchy based on focus and embeddedness.

There is evidence from a variety of sources which can be used to argue that these alternative strategies serve an important syntactic and pragmatic function and represent intermediate developmental stages in the child's acquisition of the fully syntacticised adult prototype construction. Children seem to be using these alternatives in cases which involve some degree of perceptual difficulty. For example, in the instances where resumptive pronouns mark the case relation of relativised genitive and oblique NPs in the relative clause, I would claim that they help make the case of the relativised NP recoverable, particularly when a zero strategy of relativisation is used. Resumptive pronouns aid the relativisation of NPs which are in less accessible positions of the Keenan-Comrie case hierarchy. From a universal perspective Keenan and Comrie (1979) have noted a tendency for languages to use pronoun-retaining strategies on the lower positions of the hierarchy. The use of these alternative strategies is no doubt also connected with the fact that these children do not seem to use the pronominalising or case-coding WH strategy very frequently. The alternative strategies take up the slack in the system, particularly at the lower end of the hierarchy. One could also argue that perceptual difficulties are at work in the type of alternative relativisation strategy in which the copy appears in the matrix clause. In this case, the syntactic position is easily accessible to relativisation, i.e. most of these resumptive pronouns appear in object position. However, as we have seen, object relatives on subject antecedents interrupt the matrix clause; and in terms of deep structure the two NPs are maximally distant. Here the copying of the subject after the relative clause may serve to minimise the effects of interruptibility and act as a place holder for the referent introduced initially by the speaker.⁵

Although perceptual factors probably go a long way towards accounting for the appearance of these two types of resumptive pronoun strategies, they do not completely explain the developmental changes. For one thing, adults use these alternative strategies too (cf. Romaine 1982), and it may be that children are not exposed to the fully syntacticised strategies in any great frequency until they reach school. Thus, the difference between these two modes of relativisation reflects in part a dichotomy between written and spoken language on the one hand, and formal versus informal language on the other. Secondly, shadow pronouns can occur when the relativised NP occupies one of the more accessible syntactic positions in the case hierarchy, e.g. subject and direct object. There are no examples of these in the Edinburgh children's data, but Wald (1982), who studied relativisation in the discourse of 11-12 year olds in Los Angeles, found cases in which subject shadows appeared in the speech of 11-12 year olds, e.g.

- (26) It was about some lady THAT SHE was asleep and
THAT THEY told her to read the Bible.

In fact, Wald reports that subject shadows were more common than shadows in other case relations in embedded clauses. This appears to be at odds with what we would expect the case hierarchy to predict if perceptual factors were the most important, namely: that the least accessible positions would be most likely to retain pronouns. His results indicate a need for examining the functions relative clauses serve in actual discourse. From a functional perspective, relative clauses do the work of providing further information about an NP which has been introduced into discourse. In this respect, they are like comments on topics. For a sentence like:

(27) That lassie [\emptyset I go to school with]. (8-year-old boy)

the relative clause identifies the NP that lassie as one of a potential group of lassies and singles one particular one out for further comment. Along with various other syntactic devices, e.g. indefiniteness (cf. Bates and MacWhinney 1979 for a list of devices which act like topics of comments) it provides some necessary background information which the listener may not be assumed to have by the speaker. One reason why we found that children produced more object than subject embedded relative clauses (cf. Table 3) is that new information nouns tend to be located in object position. Thus, the high percentage of object relatives may merely reflect this fact. During the course of acquisition it may be that speakers switch from a primarily discourse-oriented system to a more purely syntactically motivated one.

3. RELATIVE CLAUSES IN PIDGINS AND CREOLES

It is here that we can see some important links between the child's acquisition of relative clauses and the development of these structures in pidgins and creoles. It has often been said that pidgin syntax is shallow and that pidgins lack rules for embedding and subordination of clauses. Pidgins tend to use no formal marking to indicate that one part of an utterance is subordinate to another. Distinctive marking of relative clauses comes later in the stabilisation and expansion phase of the pidgin life cycle, or arises in the process of creolisation.

Bickerton (1977b) for example, found in Hawaiian English Creole, where relativisation is being introduced as a new syntactic construction, where none existed previously, that object relativisation was more frequent than subject relativisation. In the data from the Edinburgh children we can see an indication of this switch from object to subject relativisation between the ages of six and eight. This is apparent in Table 3, where subject focus relatives do not become more frequent than object focus relatives before the child is eight.

Another parallel can be drawn from Bickerton's work on the development of relative clauses in Hawaiian English Creole. He gives the following example:

(28) Da boi jas wawk aut from hia, hiz a fishamaen.
The boy [(who) just walked out of here] (he's) a fisherman.

Bickerton argues that we can see the beginnings of a rudimentary strategy of relativisation here. In the earliest stages of the development of this construction it is difficult to tell whether 'true' embedding or merely a conjoining process has taken place. The surface marker which eventually becomes used in a relativising function is not a specialised relative pronoun like *who* in English, but a simple pronoun. Bickerton (1977b:274) suggests that

the use of pronouns represents an intermediate stage between zero forms and the full range of English relative pronouns. Thus, the route to fully syntacticised relativisation in Hawaiian English Creole can be illustrated in the three sentences ((29-31):

- (29) You fain Hawaiians [\emptyset spik English]. zero strategy
You found Hawaiians who could speak English.
- (30) Sam [dei drink] meik chrabol. pronoun strategy
Some who drink make trouble.
- (31) Evri filipino [hu kud aford it] bai wan. English relative pronoun
Every Filipino who could afford it bought one.

The fully syntacticised stage is reached when zero marking in subject position gives way to overt relativisation (either by WH pronominalisation or that) and the copy pronoun in the subject slot of the matrix following the relative clause is deleted.

A similar progression can be traced in children's acquisition of relative clauses. In the earliest stages of syntactic development children do not use embedded sentences at all; and indeed, even in the casual spoken language of adults simple conjunction of clauses or the use of independent sentences may be a preferred discourse alternative to relativisation. We can see the close relationship between those alternatives in examples like (32) where two independent clauses occur side by side with no formal mark of connection (either subordination or co-ordination) between them.

- (32) He met 'toothless' THAT was this big lion. (8-year-old boy)

Another possible way of presenting the same information or introducing the referent 'toothless' would be a fully syntacticised relative clause, as in (33).

- (33) He met toothless, who was a big lion.

Another example attesting the close relationship between relative clauses and conjoined sentences is given in (34).

- (34) There's a big alarm bell and that goes off. (8-year-old girl)

A possible alternative again would be a relative clause, as in:

- (35) There's a big alarm bell [that goes off].

The existence of sentences like (32) and (34) as possible alternatives to relativisation and their earlier emergence than relatives suggests that in the initial stages of syntactic development children do not possess strategies for the syntactic incorporation of one clause within another. Two propositions simply occur side by side or in a co-ordinated construction as shown in the diagram in Figure 1. Only later do they acquire the syntactic means for making the relation between propositions and clauses explicit. In the case of OS relatives there is little in the way of formal marking to distinguish them from two independent clauses which occur side by side; and it is therefore not surprising that these are among the first types to be perceived and produced by children. Later the child is able to produce true embedded constructions. In stage (i) the interpretation of such a constructions as relative as opposed to two distinct clauses where no connector appears is largely a pragmatic and prosodic matter.

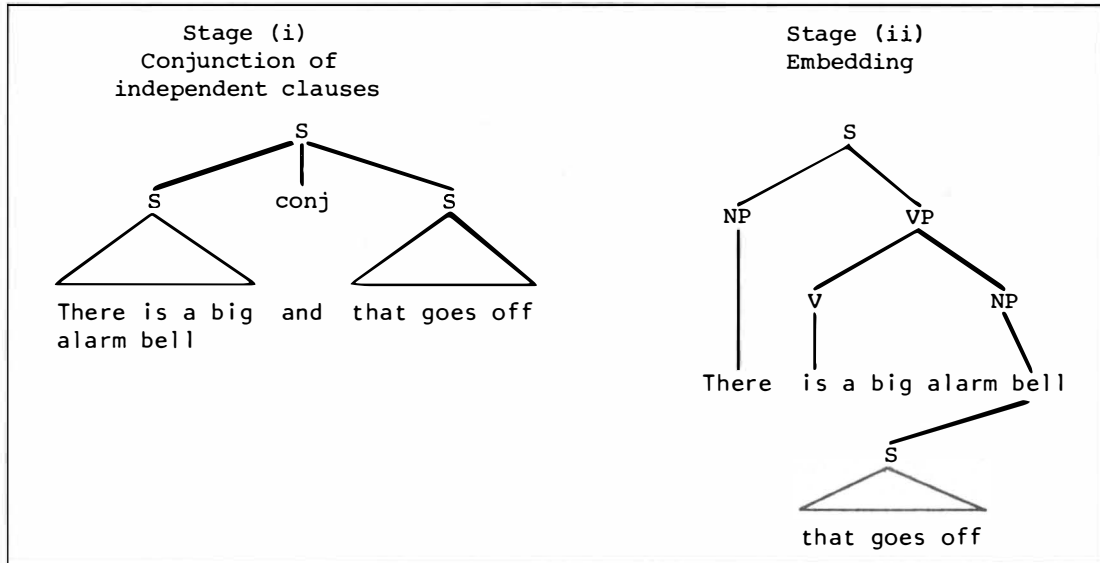


Figure 1: Stages in the syntacticisation of relative clauses

The transition from stage (i) to (ii) illustrates a change-over from discourse-pragmatic to grammatical-syntactic constraints on relativisation. In this way loose paratactic structures become condensed or syntacticised into tight hypotactic structures.

Wurm (1971), Dutton (1973), and Sankoff and Brown (1976) note the importance of intonation in the bracketing of relative clauses in Tok Pisin. Based on data from Churchill (1911), Sankoff and Brown (1976) say that relativisation in the early period of Tok Pisin's development appears to have involved no markers in the matrix S and an equi NP deletion rule in the embedded S. Hearers probably deduce the embeddedness from word order and juxtaposition of elements with the aid of prosodic features like stress and intonation.

The standard relative clause types discussed in grammars of Tok Pisin, e.g. Wurm (1971) and Dutton (1973), use no special marker of subordination. The 3rd person pronoun functions as a type of relative marker. Dutton (1973:95-96) for instance, cites the following possibilities for conjoining two sentences in a relative clause:

- (36) S1: mi lukim dok
I saw the dog
- S2: dok i ranim pik bilong mi
the dog chased my pig
- relative: mi lukim dok [em i ranim pik bilong mi]
I saw the dog that chased my pig
- dok mi lukim em [em i ranim pik bilong mi]
the dog I saw chased my pig

Dutton says that the second type is less common than the first. Although there is no case or gender marking in the pronoun, there is a plural form *ol*, which is used with plural antecedents. Oblique relatives are however a site where case marking turns up; *em* becomes *en* after *long*, *bilong* etc. Prepositions cannot be stranded. Here the relativised NP always appears as a pronoun and is never deleted, as in the following examples:

- (37) *pikinini [yu givim mani longen] em i stap long hap*
the child you gave the money to is over there (Dutton 1973:120)
- (38) *mi save dispela ples [yu go longen]*
I know where you're going (Dutton 1973:138)
- (39) *yu lukim dispela ia [kon ia wantaim isanap longen ia]*
did you see this one that has corn and cassowaries on it?
 (Sankoff and Brown 1976:214)

In subject and object relatives there is alternation between deletion and pronominalisation of the co-referential NP, but never full copying of the NP, according to Sankoff and Brown (1976:214). Subject focus relatives show the greatest variation in surface marking of the co-referential NP. Sankoff and Brown (1976) found that there was a tendency towards deletion rather than pronominalisation. This is not the case for Aitchison's (1983b:6) study of six young women in Lae. She reports that four of the five subject focus relatives in her data, and five of the 15 object focus relatives had introductory markers.

Since Aitchison does not discuss her results in terms of the factor of embeddedness, and Sankoff and Brown do not discuss theirs in terms of the factor of focus, it is not possible to make exact comparisons. Nevertheless, it can be seen that some interesting similarities, but also some differences, exist between the findings of my own study of children's relatives and those of Tok Pisin speakers' relatives. Sankoff and Brown (1976:216) found that 67 per cent of subject embedded (i.e. SO and SS) clauses were subject focus, i.e. SS. This is paralleled by my finding that for the Edinburgh children 58 per cent (i.e. 31/53) of subject embedded relatives were subject focus, although object focus relatives were overall more frequent than subject ones. The difference was however not as great as in Aitchison's data, where $\frac{3}{4}$ of the relatives were object focus. In the Edinburgh data just one half (i.e. 51 per cent) of the relatives were subject focus.⁶

There are also some points of comparison with Bickerton's data on relativisation in Hawaiian English Creole. Bickerton and Odo (1976:274-279) have observed that the few Hawaiian Pidgin English speakers who do produce relative clauses, relativise on the object noun of the matrix sentence far oftener than on the subject sentence. This is in agreement with my finding that the Edinburgh school children produce more than twice as many object embedded clauses as they do subject ones (i.e. 130 compared to 53). In Sankoff and Brown's data the difference is less, although still in the direction of favouring object over subject embedded (52 compared to 38).

Bickerton (1977b:284) also found that in Hawaiian English Creole markers were present at least twice as often in subject than in object focus relatives. Although this is paralleled by Aitchison's and my findings that deletion is less frequent in subject position, Sankoff and Brown (1976:215) report that the tendency for Tok Pisin speakers was to delete in a ratio of 2 to 1.

As far as pidgins and creoles are concerned, I have discussed the use of strategies of relativisation involving deletion or marking. However, I have

not said much about the different possibilities for marking relative clauses. We have already seen that Tok Pisin and Hawaiian English Creole use 3rd person pronouns. Sankoff and Brown (1976) discuss the creation of a new relativiser *ia* (from the place adverbial meaning *here*) in Tok Pisin via its extension as a demonstrative or generalised deictic particle in discourse, as in the example:

- (40) Meri ia [em i yangpela meri, draipela meri ia] em harim istap.
This girl, who was a young girl, big girl, was listening.

Here the particle *ia* is used to bracket an embedded clause from a matrix sentence by virtue of its placement after both the head noun and the embedded clause. Sankoff and Brown (1976:239) found that most sentences used some form of *ia* bracketing, and that the highest frequency of *ia* was in oblique relatives.

Aitchison (1983b), found no instances of *ia* bracketed relative clauses. She did however observe the use of *we* in seven out of 20 of the clauses, as in the example:⁷

- (41) Klostu em laik paition dispela sista ia, sista [we wok].
She almost hit this nursing sister, the sister who was on duty.
 (Aitchison 1983b:7)

The use of *we* as a relativiser is confined to a group of three young women who were related to each other and whose families lived near Goroka. According to Sankoff (1979:38) *we* is a 'low frequency relativiser for some current speakers', while Woolford (1979:121) notes that it is used by 'a very small percentage of Tok Pisin speakers'. The use of *we* as a relativiser also occurs in West African Pidgin English, Krio and other English-based pidgins and creoles.

As far as typology is concerned, Lehmann (1983:251) may be right when he says that the occurrence of a relative pronoun is evidently independent of language type. Furthermore, in talking about the morphological form of subordinators which function as relativisers, he suggests (1983:165) that there is no reason why a relativiser should have morpho-semantic connections to any other morphemes. This might be the conclusion one would draw from treating grammars as structural entities in isolation from their communicative functions.

Once one rejects a strictly syntactic view of relativisation in favour of a functional one, it can be seen that so-called natural languages create relativisers in similar ways to pidgins and creoles. There are certain kinds of linguistic categories which can become relativisers (e.g. deictics such as demonstrative pronouns and place adverbials, interrogatives), and thus come to perform the work of separating an NP from an embedded sentence. The common unity of these linguistic elements is probably best accommodated within a deictic theory of discourse reference; that is, they can all be used to alert the listener to a referent. Such a theory is outlined by Lyons (1975) in which he argues that the grammatical structure and interpretation of referring expressions can be accounted for through the deictic function of demonstrative pronouns and adverbs. He observes (1975:61) that the definite article and the personal pronouns in English and other languages are weak demonstratives, and that their anaphoric use is derived from deixis. It is well known that the definite article, demonstratives and third person pronouns are diachronically related. On the ground of their syntactic and semantic similarity some have argued that they should all be synchronically relatable, at least in the grammar of English.

There is support for this not only from diachrony and child language but also from pidgins and creoles. Dreyfuss (1977) compared the relative clause

formation strategies used by four creoles: Haitian Creole, Tok Pisin, Sango and Sranan. Three of these languages used a deictic marker as a relativiser. According to Dreyfuss (1977:150) the choice of the deictic in a relativising function is an independent innovation; that is, the languages have not borrowed from the superstrate. The fact that the languages are creoles does not seem to have influenced the kind of marker. None uses 'true' relative pronouns that vary with case, animacy or other characteristics of their antecedents.

Resumptive pronouns occur in all four languages, but there are differences in the positions in which they occur. All the languages, however, use them in oblique and genitive relatives. Dreyfuss (1977:170) suggests that this may be evidence that pronominalisation is the most favoured mechanism of the three possible choices available for marking the case of a co-referential NP. The other possibilities would be marking the case on the relative pronoun (i.e. Maxwell's WP-S). Where the relativised NP is a subject or direct object, however, the languages use a variety of means of encoding case. I have summarised these in Table 4.

	Haitian Creole	Tok Pisin	Sango	Sranan	English
Subject	1	2,3	2,3	2	1(2)
Direct object	2	2,3	2,3	2	1,2
Oblique/Genitive	3	3	3	3	1(2)

(1 = coding on relativiser; 2 = deletion; 3 = pronominalisation).

I have included modern English here for comparison. If we just consider the WH relatives, then English can be thought of as using only the first two strategies for coding case, namely, either by marking case on the pronoun or by deletion. I have put parentheses around the deletion strategy to indicate that it is not always possible to delete relatives in subject, genitive and oblique positions in modern English.

As I have already noted, the use of resumptive pronouns in standard English is very limited. We might expect further changes to take place in the newer creoles, i.e. Tok Pisin and Sango, as they come to be more widely spoken. One thing that may happen is that the use of resumptive pronouns in subject and object position would decrease or disappear. There might also be more constraints on deletion.

CONCLUSION

I have argued that we can identify some common developmental principles which govern the process of relativisation in child language, pidgins and creoles, once we recognise that a key part of the semantic-pragmatic function of the relative clause is the assignment of a referent to an empty NP slot. Although there has often been more interest in the formal properties of grammatical rules and their expressive role has been neglected, in both child language and creolisation we can see the evolution of structure and function. Sankoff and

Brown (1976) explicitly make the link between expansion of discourse function and the emergence of the relative clause in Tok Pisin. A bracketed relative clause is in some respects better suited to the needs of autonomous and non-interactive discourse situations, where meaning is conveyed largely by syntax rather than negotiated in face-to-face interaction (cf. also the discussion in Deuchar 1983).

One could carry this argument a bit further and say that at some level a language with relative clauses is in some respects 'better' than one without them, at least with respect to performing certain discourse functions. But what can one say about the qualitative differences between natural languages which *do* have relative clauses? The Keenan-Comrie hierarchy suggests some basic inequalities with respect to both the kinds of strategies different languages make available to their speakers, and the extent to which these strategies permit relativisation in various positions of the hierarchy. There is also the interesting fact that in many languages which have more than one type of relative clause, the different strategies are correlated with social and stylistic levels.

What are the consequences of such syntactic variation when seen in terms of logical structure and expressivity? Is there a difference in logical expressive power between languages which have certain types of relativisation strategies and not others; and is there a connection between the type of relativisation strategy a language has and the depth to which it penetrates the case hierarchy? In a cross-linguistic survey Keenan (1975) observed that languages which had pronoun-retaining strategies to mark the NP position relativised generally permitted the formation of relative clauses in a greater variety of environments than those which did not have such a strategy. To the extent that a language can express a logical structure which another language cannot, then the former may be said to be logically more expressive than the latter in that respect. Keenan proposes what he calls the Principle of Conservation of Logical Structure: that is, a construction which presents more of its logical structure (i.e. is logically more perspicacious) will have a wider distribution than one which does not, and there will be fewer restrictions on its syntactic functions (cf. also Fodor 1981).

One can also query whether there is any difference in expressivity between a language which has a weakly versus strongly grammaticalised version of some syntactic operation like relativisation. If we look at the relative clause as one possible solution to the communicative problem of locating and specifying referents in discourse, then it is not hard to see why one path of development which leads to the creation of relatives is the grammaticalisation of an anaphoric relation through the reinterpretation of what are basically deictic categories situated in the context of utterance. We can think of anaphora as a cline, as shown in Figure 2, which may be encoded by various syntactic means ranging from explicit to implicit. Languages which are [+Pro], i.e. pronoun-retaining, encode anaphora more explicitly than those which are [-Pro]. The former are thus more transparent in their marking of semantic information. Since strong grammaticalisation is characterised by semantic bleaching, this process operates at the expense of the expressive capacity of the language.

Chains of grammaticalisation repeat themselves developmentally and diachronically. Certain seemingly arbitrary syntactic structures may have their origin in a few basic communicative functions, such as deixis and anaphora. A number of emergent solutions may compete for accomplishing the same discourse functions. Some may eventually become grammaticalised, and as such serve as

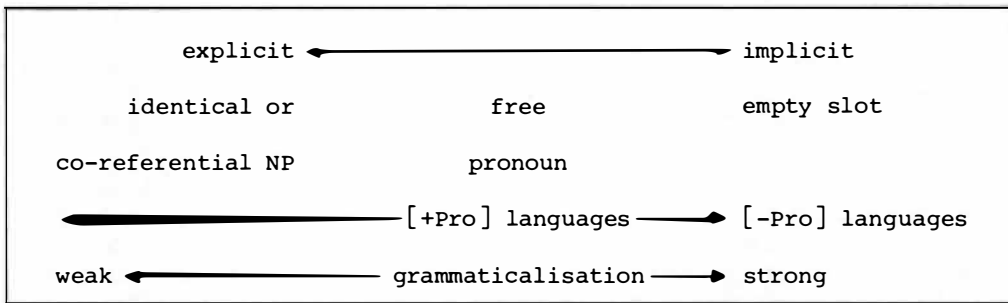


Figure 2: Anaphora

highly conventionalised, and often very efficient, strategies for dealing with recurrent communicative problems. In standard English, at any rate, pressure from the written language and prescriptive grammars enforce the fully syntacticised strategy of referring to referents, which grammarians call the relative clause.

NOTES

¹Slobin (forthcoming) shows that there are substantial differences in the rate of acquisition of relative clauses in Turkish and English. Not only are relative clauses used more frequently by English-speaking children (and adults) overall, but their development shows a much more accelerated growth curve. A major spurt takes place at around 3.6 for English speakers, while the mastery of Turkish relative clauses takes place later than 4.8. Slobin attributes these differences to two general psycholinguistic processing problems which Turkish relative clauses present to the learner: (i) they are not easily isolable as clauses; and (ii) they are not constructed in a uniform way across different types of relativisation. They are thus less transparently encoded in the syntactic structure of Turkish than English.

²In most treatments of English grammar a distinction is often made between restrictive and non-restrictive relative clauses. Restrictive clauses have the function of restricting the reference of the head NP they modify. Non-restrictive relative clauses are often said to function as comments, adding only additional information to a head which is already independently identified, or is unique in its reference, and has no need of further modification to identify its referent. The distinction is nonetheless somewhat tenuous, both synchronically and diachronically, as well as developmentally (cf. Romaine 1982). Tavakolian (1978:70) says that there is no evidence that children interpret a restrictive relative clause as a restriction of the head noun, rather than as a non-restrictive comment about it.

³It is interesting that the reverse route has been observed in a case of language death reported by Schmidt (1983), who found that less fluent Dyirbal speakers avoided subordination and the use of the embedded relative clause marker. These speakers preferred juxtaposition as a means of constructing discourse.

⁴There has been considerable debate about the status of resumptive pronouns and the nature of the relationship between them and extracted constituents with respect to binding conditions (cf. especially Chomsky 1982 and Zaenen and Maling 1982). The terms copy, resumptive and shadow pronoun have also been used in a number of different and sometimes overlapping senses by syntacticians. I use the term 'resumptive pronoun' here in the sense in which it is used in the most recent version of government and binding theory. In a sentence such as the following, *him*, is a resumptive pronoun equivalent to *t* (i.e. the trace of *who*) and is a variable bound by *who*.

The man [*who* John saw *him*].

It has generally been assumed that resumptive pronouns will occur when extraction with gaps is impossible.

⁵There is some experimental evidence to support the argument that resumptive pronouns facilitate processing (cf. Wall and Kaufman 1980). Zaenan and Maling (1982), however, note that the structures in which resumptive pronouns are found are in themselves more difficult to process than those out of which extraction is possible with a gap.

⁶Menyuk (1969) found that 87 per cent of children between the ages of 3-7 used object relatives, while 46 per cent used subject relatives. Slobin (forthcoming) also found that for both English- and Turkish-speaking children and adults overall more relative clauses were formed on non-subject NPs. He concludes that if a language provides equivalent means for relativising on various positions of the case hierarchy, the advantage to subject relativisation is not demonstrated.

⁷This particular example does however arguably show the rudimentary traces of a *ia*-bracketed relative clause, since *ia* occurs here as a postposed deictic (cf. Sankoff and Brown's 1976:244f discussion of the constraints on *ia*-bracketing). Siegel (1981) cites the use of *we* as a relativiser as a feature of creolised Tok Pisin. Even more characteristic of written Tok Pisin however is the emergence of the relativiser *husat*, which does not normally occur in the spoken language. Siegel (1981:31) records the first usage in Wantok, April/May 1979 and says that it also occurs in media broadcasts. It will be interesting to see whether it spreads into colloquial usage. An example is (Siegel 1981:30):

Mi laik autim wari bilong mi i go long ol manmeri husat i save
baim samting long maket.
*I'd like to bring out my worry to the people who buy things at
the market.*

BIBLIOGRAPHY

AITCHISON, J.

- 1983a Pidgins, creoles and child language. *WPLPRG* 5:5-16.
- 1983b Social networks and urban New Guinea pidgin (Tok Pisin). Papers from the York Creole Conference. *York Papers in Linguistics* 11.

BATES, E. and B. MACWHINNEY

- 1979 A functionalist approach to the acquisition of grammar. In E. Ochs and B. Schieffelin, eds *Developmental pragmatics*, 167-211. New York: Academic Press.

BICKERTON, D.

- 1977a Pidginization and creolization: language acquisition and language universals. In A. Valdman, ed. *Pidgin and creole linguistics*, 49-69. Bloomington: Indiana University Press.
- 1977b *Change and variation in Hawaiian English* vol. 2: *Creole syntax*. Honolulu: Social Sciences and Linguistic Institute, University of Hawaii.
- 1981 *Roots of language*. Ann Arbor: Karoma.

BICKERTON, D. and C. ODO

- 1976 *Change and variation in Hawaiian English* vol. 1: *General phonology and pidgin syntax*. Honolulu: Social Sciences and Linguistics Institute, University of Hawaii.

CHOMSKY, N.

- 1982 *Some concepts and consequences of the theory of government and binding*. *Linguistic Inquiry Monograph* 6. Cambridge, Mass: MIT Press.

CHURCHILL, W.

- 1911 *Beach-la-Mar, the jargon or trade speech of the Western Pacific*. Carnegie Institution of Washington, Publication No.164.

DEUCHAR, M.

- 1983 Relative clauses and linguistic equality. Paper presented at the Language Association of Great Britain meeting, Newcastle upon Tyne, September 1983.

deVILLIERS, J.G., T. FLUSBERG, K. HAKUTA, and M. CHEN

- 1979 Children's comprehension of relative clauses. *Journal of Psycholinguistic Research* 8:499-518.

DREYFUSS, G.R.

- 1977 Relative clause structure in four creole languages. Ph.D. dissertation, University of Michigan.

DUTTON, T.E.

- 1973 *Conversational New Guinea Pidgin*. PL, D-12.

FODOR, J.D.

- 1981 Does performance shape competence? *Phil. Trans. R. Soc. London* B295:285-295.

GIVÓN, T.

- 1979 *On understanding grammar*. New York: Academic Press.

KEENAN, E.L.

- 1975 Logical expressive power and syntactic variation in natural language. In E.L. Keenan, ed. *Formal semantics of natural language*, 406-421. Cambridge: Cambridge University Press.

KEENAN, E.L. and B. COMRIE

- 1977 Noun phrase accessibility and universal grammar. *Linguistic Inquiry* 8:63-99.
- 1979 Data on the noun phrase accessibility hierarchy. *Language* 55: 332-352.

KRASHEN, S.D.

- 1973-74 Lateralization, language learning, and the critical period: some new evidence. *Language Learning* 23:3-74.

LIMBER, J.

- 1973 The genesis of complex sentences. In T. Moore, ed. *Cognitive development and the acquisition of language*. New York: Academic Press.

LEHMANN, C.

- 1983 *Der Relativsatz*. Tübingen: Gunter Narr.

LYONS, J.

- 1975 Deixis as the source of reference. In E.L. Keenan, ed. *Formal semantics of natural language*, 61-83. Cambridge: Cambridge University Press.

MAXWELL, D.

- 1979 Strategies of relativization and NP accessibility. *Language* 52: 352-372.

MENYUK, P.

- 1969 *Sentences children use*. Cambridge, Mass: MIT Press.

MÜHLHÄUSLER, P.

- 1980 Structural expansion and the process of creolization. In A. Valdman and A. Highfield, eds *Theoretical orientations in creole studies*, 19-55. New York: Academic Press.

QUIRK, R., S. GREENBAUM, G. LEECH, and J. SVARTVIK

- 1972 *A grammar of contemporary English*. London: Longman.

ROMAINE, S.

- 1975 Linguistic variability in the speech of some Edinburgh school children. M.Litt. thesis. University of Edinburgh.
- 1982 *Socio-historical linguistics: its status and methodology*. Cambridge: Cambridge University Press.
- 1983 Towards a typology of relative clause formation strategies in Germanic. In J. Fisiak, ed. *Historical syntax*, 437-470. The Hague: Mouton.

ROMAINE, S.

- 1984 *The language of schoolchildren and adolescents; the acquisition of communicative competence.* Oxford: Blackwell.

SANKOFF, G.

- 1979 The genesis of a language. In K.C. Hill, ed. *The genesis of language*, 23-47. Ann Arbor: Karoma.

SANKOFF, G. and P. BROWN

- 1976 The origins of syntax in discourse: a case study of Tok Pisin relatives. *Language* 52:631-666.

SCHMIDT, A.

- 1983 Young people's Dyirbal: an example of language death from Australia. M.A. thesis, Australian National University.

SHELDON, A.

- 1974 The role of parallel function in the acquisition of relative clauses in English. *Journal of verbal learning and verbal behavior* 13:272-281.

SIEGEL, J.

- 1981 Developments in written Tok Pisin. *Anthropological Linguistics* 1981:20-35.

SLOBIN, D.

- 1977 Language change in childhood and history. In C.F. Ferguson and D. Slobin, eds *Studies of child language development*, 175-208. New York: Holt, Rinehart and Winston. Also in John McNamara, ed. *Language learning and thought*, 175-208. New York: Academic Press.

- f/c The acquisition and use of relative clauses in Turkic and Indo-European languages. To appear in K. Zimmer and D. Slobin, eds *Studies in Turkish linguistics*.

TAVAKOLIAN, S.

- 1977 Structural principles in the acquisition of complex sentences. Ph.D. dissertation, University of Massachusetts.

- 1978 The conjoined-clause analysis of relative clauses and other structures. In H. Goodluck and L. Solan, eds *Papers in the structure and development of child language*, 4. University of Massachusetts Occasional Papers. Linguistics Department, University of Massachusetts Amherst.

TODD, L.

- 1974 *Pidgins and creoles.* London: Routledge and Kegan Paul.

WALD, B.

- 1982 Syntacticization in language development: clause status variation. Paper given at New Ways of Analyzing Variation in English XI Conference, Georgetown University Washington D.C.

WALL, S. and L. KAUFMAN

- 1980 The processing of resumptive pronouns. Manuscript, Brandeis University.

WOOLFORD, E.

- 1979 The developing complementizer system of Tok Pisin: syntactic change in progress. In K.C. Hill, ed. *The genesis of language*, 108-124. Ann Arbor: Karoma.

WURM, S.A.

- 1971 *New Guinea Highlands Pidgin: course materials*. PL, D-3.

ZAENEN, A. and J. MALING

- 1982 The status of resumptive pronouns in Swedish. In E. Engdahl and E. Ejerhed, eds *Readings in unbounded dependencies in Scandinavian languages*, 223-230.

