

THE PRAGMATICS OF CORRECTIONS IN THE PROCESS OF FIRST LANGUAGE ACQUISITION: A RELEVANCE- THEORETIC APPROACH¹

by
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In this paper, I draw upon Relevance Theory (Sperber and Wilson 1995) in pragmatics to propose a new perspective of studying corrective speech addressed to language-acquiring children when they are heard to make grammatical mistakes. For this purpose, I adopt the view that a speaker's (S) speech is correction only when a hearer (H) interprets the pragmatic function of S's utterance as being intended to correct a form that H has used, by accessing a specific set of contextual assumptions as part of an inferential process which H has to undertake. I then review previous studies on corrective speech in the first language acquisition process. I finally contend there is a need to distinguish two kinds of corrective speech, namely, exposed correction and embedded correction (Jefferson 1987), in order for the relationship between corrections and children's recovery from their grammatical mistakes to be examined usefully.

1. Introduction

Here, I introduce the background for this paper and the new perspective I propose for studying corrective speech in the first language acquisition process.

1. 1. Background

The background for writing this paper is effectively captured by this quotation from Saxton (2000):

There is a universal assumption within theories of child language acquisition that the grammar of young children is not perfect and that, consequently, grammatical errors are prone to arise in their speech. There is an equally strong assumption that normally

developing children eventually recover from errors in the process of acquiring a mature, adult-like system of grammar. The task then is to explain how children achieve this recovery from error. (Saxton 2000:222)

In response to the issue of how children recover from grammatical errors, one line of explanation is that, when they speak ungrammatically, young children are immediately spoken back to with corrective speech (e.g., Brown and Bellugi 1970; Hirsh-Pasek, Treiman and Schneiderman 1984; Demetras, Post and Snow 1986; Bohannon and Stanowicz 1988; Farrar 1992; Saxton 1995; Saxton 1997; Strapp 1999; Strapp 2000; Saxton 2000; Chouinard and Clark 2003). In the relevant literature, corrective speech is largely characterised as parental responsive speech in which a corrective linguistic form is identified, such as *the truck*, *is* and *better* respectively in [1], [2], and [3] below:

[1]
Child: See truck. See truck, Mommy.
Mother: Did you see the truck?
Child: No I see truck.
(Brown and Bellugi 1970:79; adapted)²

[2]
Child: That be monkey.
Adult: That is a monkey.
(Bohannon and Stanowicz 1988:685)

[3]
Child: I say it *gooder*.
Adult: Better.
Child: Better, yeah.
(Saxton 2000:224; italics original)

THE PRAGMATICS OF CORRECTIONS

Corrective speech, as studied in the relevant literature, also includes what are known as occasional questions (e.g., Brown, Cazden and Bellugi 1970), or elsewhere as wh-questions (e.g., Saxton 2000), such as *who* in [4] below:

[4]

Child: Michael dad gave them to him.

Adult: Who?

Child: *Michael dad.*

Adult: Who?

Child: *Michael's dad.*

(Saxton 2000:229; italics original)

According to the relevant literature, since parents' responsive speech contains a correct form or a prompting lexical item, as illustrated in the above examples, the speech counts as correction to a child and it is the parents' corrective speech which leads a child to realise his grammatical mistake and recover from his error.

In the present paper, I take a different stance. On the one hand, I agree with the proposal that parents' responsive speech containing a correct form, like that in [1], [2], and [3], or a wh-question word, like *who* in [4], can be categorised as correction. On the other hand, I take the view that the presence of a corrective form or a prompting lexicon does not self-explanatorily indicate that it is actually correction. Instead, it is an inferential process, undertaken by a hearer, which explains why such responsive speech is correction, and also how a hearer is led to interpret that speech as being correction. Until this inferential process leads the hearer to recognise such responsive speech as correction, the speech will not cause him to realise his mistake and so recover from his error. Since the previous literature has not given an account of why such responsive speech is correction, and how a hearer is led to interpret the speech as being correction, I will offer an explanation that arises from my present research.

I contend that, in order to undertake this inferential process leading to the recognition of correction, a hearer needs to draw upon a pragmatic principle, and process the parents' responsive speech in a very specific context.

1.2. Theoretical departure

I believe that Relevance Theory (Sperber and Wilson 1995) provides the pragmatic principle that a hearer draws upon in order to undertake the inferential process which leads him to recognise parents' responsive speech like that shown in [1], [2] [3] and [4] as being correction.

According to Relevance Theory,

- (1) 'human communication is intentional' in that it is intended to 'modify and extend the mutual cognitive environment they [i.e. humans] share with each other' (Sperber and Wilson 1995:64);
- (2) the intention of communicated information is 'mentally represented and inferentially processed' (Sperber and Wilson 1995:64);
- (3) a hearer's inferential process is guided by the principle of relevance. Or, it is 'geared to achieving the greatest possible cognitive effect for the smallest possible processing effect' (Sperber and Wilson 1995:vii);
- (4) the undertaking of an inferential process involves processing new information with old information: 'a crucial step in the processing of new information, and in particular of verbally communicated information, is to combine it with an adequately selected set of background assumptions – which then constitutes the context' (Sperber and Wilson 1995:137-8).

THE PRAGMATICS OF CORRECTIONS

In the present paper, I apply these insights from Relevance Theory to the investigation of parent-child corrective interaction. I argue that

- (1) parents' corrective speech needs to be processed within the context of a child's ungrammatical speech in order for it to be interpreted as correction;
- (2) the interpretation that parents' corrective speech corrects a child's grammatical mistake is a contextual implication which a hearer draws from the synthesis of (a) the content and form of a child's ungrammatical speech and (b) the content and form of a parent's responsive speech;
- (3) in order to draw the contextual implication that parents' corrective speech is correction, a hearer needs to supply a specific set of contextual assumptions;
- (4) the accessibility of this set of contextual assumptions is associated with the properties of parents' corrective speech, as well as with a child's inferential abilities;
- (5) until a child has recognised the correction contained in corrective speech he hears, he will not use the corrective information to eliminate his grammatical mistakes.

On the above basis, I seek to examine how the properties of parents' corrective speech, along with a child's inferential abilities, affect the likelihood that a child will actually recognise the speech as correction, and then use the corrective information in order to correct his grammatical mistakes. I also seek to investigate, from the perspective of Relevance Theory, the relationship between corrective speech and children's recovery from their grammatical mistakes.

2. The importance of studying corrective speech

The broad context for studying corrective speech in the first language acquisition process is that this speech is a part of the language environment which a child uses as the input for his ultimate mastery of a language. Since children go through similar stages in the acquisition of language, scholarship has suggested that 'motherese', caretaker language or caregiver language (i.e., speech addressed to children), can solve this mystery (Aitchison 1998:148). As also put by Pinker, '[t]here can be no doubt that children learn a language at least in part by hearing sentences of that language from their parents or peers' (1984:28).

In accordance with this view of motherese, children learn fast, acquiring a language in the first five years of their life; the speech addressed to them is rather different from that used by and to adults, and therefore grabs their attention. Scholarship in the area of language acquisition has conducted a range of research in order to reveal the distinctive characteristics of motherese. For instance, the widely quoted study on adult speech to infants by Newport, Gleitman and Gleitman (1977) indicates that such speech tends to be slow, high-pitched, with smooth, exaggerated intonation contours, with Fernald (1993) later finding that this is a universal feature of motherese across different languages. Studies separately carried out by Phillips (1973) and Cooper and Paccia-Cooper (1980) show that parents' speech exaggerates grammatical phrase boundaries. The research conducted by Wells (1979) reveals that there is a link between words and constructions which occur frequently in adult speech, and those acquired early by children. And research by Snow (1979), Snow and Ferguson (1977), Ervin-Tripp (1978), and others all show that adults somewhat attune their speech to children's linguistic abilities.

With respect to corrective speech contained in motherese, its role for language acquisition has been assumed to be to provide children who have just spoken ungrammatically, with information as to which sentences are ungrammatical (e.g. Gold 1967; Pinker 1984; Marcus

1993; Sokolov and Snow 1994; Saxton 1995, 1997; Aitchison 1998). According to Saxton (2000), a general consensus in the literature of first language acquisition to date is that while children make grammatical errors during the course of acquiring a target grammar, in the end they learn the mature or adult system of the grammar. In order to find out how children recover from their grammatical mistakes, and achieve the acquisition of a target grammar, one line of argument poses that children receive 'negative evidence' from motherese (e.g., Gold 1967; Bohannon and Stanowicz 1988; Farrar 1992; Saxton 2000). The interest in corrective speech in the case of language-acquiring children is therefore to find if the use of such speech can account for children's recovery from grammatical mistakes.

For this purpose, corrective speech has been hypothesised as the source of *negative* evidence. This is evident in the first proposal on the existence of negative evidence, by Gold (1967), as follows:

The child receives negative instances [i.e., negative evidence] by being corrected in a way we do not recognize. ... The child may receive the equivalent of negative instances for the purpose of grammar acquisition when it does not get the desired response to an utterance. (Gold 1967:453-4)

In the present paper, I draw upon Gold (1967) in order to review subsequent literature on corrective speech and its relationship with negative evidence. The reason for doing this is that some of the key researchers in these two areas, such as Farrar (1992), Bohannon and Stanowicz (1988), Marcus (1993), Pinker (1984, 1989, 1998), Saxton (1995, 1997, 2000), Snow (1995), Sokolov and Snow (1994), all develop (in one way or another) Gold's ideas on corrective speech and negative evidence, and use these ideas to support claims for either the availability or the unavailability of negative evidence.

Importantly, the notion of negative evidence for language acquisition has led to two quite distinct types of theorising on how acquisition is actually achieved. One view supports the importance of

negative evidence in a child's language environment. The other supports the importance of a child's innate mechanisms. Below are remarks by some scholars who, following Gold (1967), comment on the question of negative evidence versus innate mechanisms:

Bohannon and Stanowicz (1988:684):

[I]f children's conversational partners provide some form of corrective feedback (i.e., negative evidence), then many of the innate linguistic constraints recently proposed would become unnecessary
....

Snow (1995:189-90):

In the domain of grammatical acquisition, most of the attention has been directed to establishing the existence and role of negative evidence. The argument for the central importance of negative evidence goes like this: given children's well attested tendencies to hypothesize, generalize, and extrapolate from the available information, negative evidence is crucial to help them restrict the overly general rules they are likely to formulate.

Sokolov and Snow (1994:51):

...the question about the availability of negative evidence determined the answer to the question about innateness. Without negative evidence, languages were unlearnable unless initial hypotheses were innately constrained. With negative evidence, natural languages could be learned without innate constraints.

Pinker (1998:207):

...a key issue in the logical problem of language acquisition [is]: whether children can count on 'negative evidence' to refute any

overly general hypothesis they hold. If not, the children must rely on some endogenous mechanism to prevent or scale back overgeneration. The issue is still central to research in language acquisition

We can see that for Bohannon and Stanowicz (1988), if corrective feedback is found to be available in interlocutors' speech to a young child, then they would regard such corrective feedback as negative evidence, and they would conclude that the child necessarily depends on external corrective feedback, rather than on innate linguistic constraints, in order to recover from his mistakes. For Snow (1995), and Sokolov and Snow (1994), the importance of negative evidence is explicitly related to how one theorises the acquisition of grammar, inasmuch as its existence or non-existence crucially distinguishes two types of theorisation.

For Pinker (1998), the term 'negative evidence' itself is used in a different way from Bohannon and Stanowicz (1988), Snow (1995), and Sokolov and Snow (1994). Instead, Pinker uses this term to refer to corrective speech or correction to a child³, whereas the others use this term to refer to negative evidence as meant by Gold (1967). Despite this, Pinker's (1998) view on grammar acquisition is similar to that of Snow's (1995) and to that of Sokolov and Snow's (1994), in that according to him, if corrective speech is found to be available to a child, then theorists need to determine whether or not a child depends on, or in Pinker's own words, 'counts on', this speech to recover from his mistakes. Still in Pinker's (1989) view, if a child does not depend on corrective speech to recover from his mistakes, then one may conclude the child depends on innate mechanisms for such recovery.

Here, I use the term 'negative evidence' in the same way as do Gold (1967), Snow (1995), and Sokolov and Snow (1994); I examine the phenomenon of corrective speech in a child's language environment and its relationship with negative evidence. As is clear from the above quotations, negative evidence has been granted an important status in theorising how young children recover from their grammatical mistakes.

Given that corrective speech has been regarded as the source for negative evidence in the relevant literature, it is consequently important to examine whether or not corrective speech plays the role of negative evidence.

It is my view that the studies which have been conducted on the phenomenon of corrective speech have limitations in explaining its relationship with negative evidence, and I therefore propose to re-investigate corrective speech from a new perspective.

In the following, I will demonstrate these limitations by reviewing three relevant issues which have been examined in the literature of language acquisition:

- (a) What is negative evidence?
- (b) What characterises the corrective speech that is directed to a child?
- (c) What is the criterion for judging whether or not corrective speech counts as negative evidence for a child?

3. The relationship between corrective speech and negative evidence

In this section, I review developments in research on negative evidence, corrective speech and their relationship with each other.

Gold's proposal on negative evidence (1967:453-4; see Section 2, above) states that '[t]he child may receive the equivalent of negative instances for the purpose of grammar acquisition when it does not get the desired response to an utterance'. In my view, this points to three important aspects of the concept of negative evidence, which I will now discuss one by one in the next sub-sections.

3.1. The concept of negative evidence

The first aspect of negative evidence has to do with the understanding of the actual concept itself. In my view, what Gold proposes is that negative evidence is realised in the form of a type of responsive speech. In order for this particular type of response to count as negative evidence for a child, it needs to be recognised by the child as an undesired response to his speech and also, at the same time, as being provided for the purpose of his grammar acquisition. Since negative evidence is discussed in the context where a child is heard to speak ungrammatically, I argue that when a child uses the undesired responsive speech for the purpose of his grammar acquisition, this means the child uses the speech to correct his grammatical mistakes. In order for a child to use the speech to correct his grammatical mistakes, it must be that such speech provides information to the child that his speech is not grammatical.

This understanding of the concept of negative evidence is reflected in the definition given by some scholars like Pinker (1989), Marcus (1993), and Sokolov and Snow (1994), and it underpins my present research. The definitions by these scholars attempt to highlight the essence of the concept of negative evidence; all the scholars refer to a certain type of responsive speech by the term 'negative evidence'. Compare:

Pinker (1989:10):

Negative evidence is information about the ungrammaticality of every ungrammatical string composed of the language's vocabulary items.

Marcus (1993:53):

Negative evidence, ... i.e., information about which strings of words are not grammatical sentences.

Sokolov and Snow (1994:40):

Negative evidence, ..., information that a particular utterance contains error.

As we see, all the above scholars emphasise that negative evidence is information that a child's speech is ungrammatical. This indicates that in order for a type of speech that responds to a child's ungrammatical speech to be negative evidence, the first condition is that it provides information that a child has made a grammatical mistake; in other words, that the speech needs to be corrected.

Apart from this, these scholars have different opinions regarding the extent to which information of a child's ungrammaticality needs to be specifically provided to a child. Pinker (1989) requires a child be provided with such information on every occasion of ungrammatical speech. Marcus (1993) and Sokolov and Snow (1994) do not have this requirement. Instead, they all hold the view that 'probabilistic learning' is possible (Sokolov and Snow 1994:45), in that a child does not have to be given information of the ungrammaticality of his speech on all occasions in order for a certain type of responsive speech to function as negative evidence.

In my present research, I incorporate the views of all these scholars, and thus take the stance that, in order for a type of responsive speech to be categorised as negative evidence, the speech must provide information that a child has made a grammatical mistake, and that such speech does not have to be available on all occasions of a child's ungrammatical speech. However, I also take the view that, if we judge the existence of negative evidence solely on the basis of the availability of corrective speech, and if at the same time we can identify different types of such speech, then the more available type of speech would be a better source for negative evidence.

Since negative evidence is discussed in terms of its importance for a child's acquisition of a grammar, it is important to note it must be the child who recognises the responsive speech as providing information

on the ungrammaticality of his speech. That is, it must be the child who recognises the responsive speech as a correction. Though not mentioned in the definitions above, this particular aspect is emphasised by Gold (1967), when he points out a child is the recipient and user of negative evidence.

3.2. The criteria for categorising negative evidence

The second important aspect of Gold's (1967) concept of negative evidence concerns the criteria for categorising corrective speech as negative evidence. That is, when it is available, corrective speech is equivalent to negative evidence only when a child uses the speech to correct his grammatical mistakes. Otherwise, even though such speech is available, one cannot claim the corrective speech equates with negative evidence.

This suggests that the corrections which have the potential function of negative evidence and the corrections which actually function as negative evidence for acquisition can be assessed independently of each other. Specifically, we can on the one hand categorise responsive speech as corrections, and also on the other hand assess its function as negative evidence for a child during the acquisition process. And the criterion needed to further assess the candidateship of corrective speech as negative evidence is whether or not a child does use the speech to correct his grammatical mistakes.

So there are at least two criteria we need to draw upon when categorising corrective speech as negative evidence. The first is whether or not corrective speech is available. The second is whether or not a child uses corrective speech to correct his grammatical mistakes. However, there are some scholars who tend to equate corrective speech with negative evidence solely on the basis of the first criterion. For instance, Bohannon and Stanowicz (1988) claim that corrective speech is negative evidence is based solely on the fact that such speech is available:

[T]he repetitious contrasts [i.e. corrective speech] in our study ... offer language learners not only simple error detection but also information as to correct (or at least acceptable) alternatives. In this light, repetitious feedback by adults may be considered ... as qualified to assume the role 'negative evidence'. (Bohannon and Stanowicz 1988:688)

In my present study, I take Gold's view that, in order to categorise corrective speech as negative evidence, we need to have evidence that a child uses the speech to modify his grammar. Consequently, Bohannon and Stanowicz's (1988) criterion for negative evidence is inadequate.

On the other hand, since negative evidence distinguishes two types of theorising language acquisition (cf. Section 2, above), I believe we may not be able to claim the existence of negative evidence, even though we have evidence that corrective speech is available and is used by a child for the purpose of his grammar acquisition. As Pinker states (1989:10), '[n]egative evidence, even if used, would have to be necessary to avoid or recover from overgeneration'. Bearing in mind that Pinker, by the term negative evidence, means corrections or corrective speech, I think what Pinker suggests is that, after we have obtained evidence that corrections are available and are used by a child, we also need to have evidence a child does not recover from his grammatical mistakes when such corrections are *not* available to him. It is only when we have obtained such evidence that we can actually claim that a child depends on corrections for the acquisition of grammar.

Hence, for categorising corrective speech as negative evidence, we need to draw upon the following three criteria:

- (a) the speech is existent;
- (b) the speech, when existent, is used;
- (c) the speech, when used, is necessary.

THE PRAGMATICS OF CORRECTIONS

On this basis, I make the following claim for corrective speech and negative evidence:

Corrective speech is a phenomenon in the language environment of a child; by contrast, negative evidence is a function which is assigned to corrective speech by a child for the purpose of eliminating a grammatical mistake. Specifically, this function needs to be such that it provides information that the child has made a grammatical mistake. That is, a child needs to recognise corrective speech as being corrective in order to use the speech as negative evidence for acquisition.

3.3. The process of recognising corrective speech as negative evidence

If it is accepted that a child needs to recognise corrective speech as providing information on the ungrammaticality of his speech, then the question must be how a child assigns such a function to the speech he hears.

In the literature of language acquisition, corrective speech is identified in various forms, such as shown in the examples below, [1]-[4]:

[1]

Child: That be monkey.

Parent: That is a monkey.

(Adapted from Bohannon and Stanowicz 1988:685)

[2]

Child: See truck, Mommy. See truck.

Parent: Did you see the truck?

(Adapted from Brown and Bellugi 1970:79)

[3]

Child: I say it *gooder*.

Adult: Better.

(Saxton 2000:224; italics original)

[4]

Child: Michael dad gave them to him.

Adult: Who?

Child: *Michael dad.*

Adult: Who?

Child: *Michael's dad.*

(Saxton 2000:228; italics original; see also Section 1.1 above)

Those who have identified these forms of corrective speech all claim these forms of speech play the role of negative evidence. However, none of these researchers have explained how a child succeeds in recognising this role of corrective speech. Since by using these forms, a parent does not explicitly indicate to a child that the child's speech is ungrammatical, there is a need to explain how a child may arrive at the assumption that corrective speech really has such a function. I would argue that, in order to explain this process, it is necessary to focus on the inferential work carried out by the child.

My literature survey shows that thus far, only two authors explicitly highlight the importance of a child's inferential work, in order for him to recognise corrective speech as providing information on the ungrammaticality of his previous speech. But these authors have only highlighted this issue on a limited basis.

The first author is Gold (1967). As seen in the quotation at the beginning of Section 2, Gold (1967) states that '[t]he child may receive the equivalent of negative instances for the purpose of grammar acquisition when it does not get the desired response to an utterance' (pp. 453-4). In my view, what Gold suggests is that a child may recognise corrective speech as functioning as negative evidence only when he infers that the speech is an undesired response to his previous utterance. This suggests a child needs to process the speech he hears. Since a child usually engages his ungrammatical speech in a topic (e.g., a question), a response which he *desires* from his conversational partner would be one which deals with the same topic (e.g., a reply to a question). And if a child does then get a *desired* response like this, the

child would possibly not be led to assign a function to the responsive speech as being information about the grammatical status of his speech. Consequently, it must be the case that the first step for a child to take in the direction of recognising corrective speech as negative evidence is that the child assumes that the speech is *not a desired* response to the child's discourse topic, as pointed out by Gold (1967).

But this raises another question. On what grounds would a child recognise an interlocutor's speech that responds to his prior utterance as being either *desired* or *undesired*?

Except for his brief proposal, Gold (1967) does not discuss further the inferential process which leads a child to interpret corrective speech as an undesired response to his utterance. Thus, even though he implies a child needs to carry out some inferential work, he does not make clear what this inferential work consists of. Gold's proposal on the relationship between corrective speech and negative evidence is therefore somewhat limited.

After Gold (1967), it took nearly three decades for another author to point out that a hearer of corrective speech, e.g., a child, needs to assume a pragmatic principle so as to process and interpret corrective speech. That author is Susanne E. Carroll (1995).

In what, according to Carroll, is 'the first attempt to point out some of the specific problems underlying the *interpretation* of explicit and/or implicit verbal feedback' (1995:73; italics original), it is the principle of relevance that guides a hearer's inferential process. Specifically, Carroll proposes an inferential process as follows (1995:78-79):

- a. The Corrector does not violate the Cooperative Principle and is not perceived by the Learner to have violated it.
- b. The Corrector's contribution is irrelevant to the on-going discourse.

- c. The Learner assumes that the Corrector has a Corrective Informative Intention, that is, that he wants to say something about the form of the Learner's previous utterance.

In this proposal, Carroll, like Gold, assumes that in order for corrective speech to count as negative evidence for a language learner, an inferential process on the learner's part must take place before he can use the corrective information in the speech. But unlike Gold, Carroll usefully points to a pragmatic principle that a hearer needs to draw upon in order to complete the inferential process.

While I generally agree with Carroll that an inferential process on a child's part can be explained by relating it to a pragmatic principle, I feel that Carroll's application of pragmatic principles to the necessary inferential process is somewhat inconsistent. At the beginning of her paper (1995:73), Carroll explicitly 'presuppose[s] that [Sperber and Wilson's] Relevance Theory can handle it [i.e., the interpretation of verbal feedback]'. But when she proposes the actual inferential process, as quoted above, she turns to Grice's Cooperative Principle. It is also evident that with her proposal of the inferential process, Carroll switches between the two pragmatic principles, and thus contradicts her initial claims about Relevance Theory.

To summarise, my claim is that, in order for corrective speech to function as negative evidence for a child, the child needs to undertake an inferential process. I propose that Sperber and Wilson (1995) provide a way of understanding this process, with regard to which previous scholarship has only made very limited contribution.

3.4. Summary

Thus far, I have claimed, by reviewing the relevant literature, that the relationship between corrective speech and negative evidence should be understood as the following:

THE PRAGMATICS OF CORRECTIONS

- (1) *the term 'corrective speech' needs to be viewed as a way of categorising a type of speech that responds to a child's ungrammatical speech;*
- (2) *the term 'negative evidence' needs to be viewed as a way of describing the function of corrective speech for a language learner;*
- (3) *until corrective speech is observed to be used by a child as the basis to modify his grammar, one cannot categorise the speech as negative evidence for the child; and*
- (4) *an inferential process guides a child's use of corrective speech as negative evidence.*

I have not, however, so far made any claims as to how corrective speech should be understood. Since, as my review shows, the notion of corrective speech is crucial for any in-depth discussion of its function as negative evidence, I will deal with this notion in the next section. Specifically, I review how previous scholarship in language acquisition addresses corrective speech, and how corrective speech should be understood from a relevance-theoretic perspective.

4. The phenomenon of corrective speech in acquisition

At the time of Gold's (1967) research, the nature of corrective speech was not too well understood; according to him, '[t]he child receives negative instances [i.e. negative evidence] by being corrected in a way we do not recognize' (p. 453; see Section 2, above). Subsequent to Gold (1967), scholars in corrective speech have engaged themselves in recognising the ways in which children are corrected, and thereafter examined the relationship of corrective speech with negative evidence for the acquisition of grammar. This, to my mind, is a response to Gold's original proposal, though, as I show below, there are still

problems that are unexplained (or even inexplicable), and this requires a new approach to research.

The categorisation of corrective speech directed to young children has been carried out in a number of empirical studies which record and analyse parents', or other adult interlocutors', responses to children's ungrammatical speech in parent (or adult)-child everyday interaction. The results from these studies show that corrective speech addressed to small children falls into three major sub-categories, with a number of different terms assigned to them. These I will now illustrate.

4.1. Overt correction

This term is attributed to Garcia and Jaeger (1986) and Messer (2000); it refers to what Brown and Hanlon (1970) call 'disapproval'.

Brown and Hanlon's (1970) study is one of a series of empirical studies which Roger Brown (1970) carried out, together with a number of colleagues under his direction. This series of studies pioneered empirical research in language acquisition, and have been influential because '[t]he project made many discoveries that we now take for granted and whose significance is still being debated' (Pinker 1998: 206).

Based on the hypothesis that 'ill-formed constructions in child speech give way to well-constructed constructions because there is a selection pressure in communication which favors the latter' (Brown and Hanlon 1970:194), Brown and Hanlon carried out a study in order to find out whether or not parents disapprove of their children when the latter speak ungrammatically, and approve of them when they speak grammatically. In their hypothesis, parental speech that represents approval and disapproval can be graphically represented as follows:

THE PRAGMATICS OF CORRECTIONS

	Parents approve via the following forms of speech	<i>Parents disapprove via the following forms of speech</i>
When children's speech is grammatical	<i>That's right;</i> <i>Correct;</i> <i>Very good;</i> <i>Yes;</i> etc.	-----
When children's speech is ungrammatical	-----	<i>That's wrong;</i> <i>That's not right;</i> <i>No;</i> etc.

Table 1: *Overt correction*
(Brown and Hanlon 1970:200; adapted)

Contradictory to their hypotheses, Brown and Hanlon's research reveals that '[i]n neither case is there even a shred of evidence that approval and disapproval are contingent on syntactic correctness' (1970:201). In consequence, Brown and Hanlon conclude that '[e]xplicit approval and disapproval ... seems not to be the force propelling the child from immature to mature forms' (1970:202).

Findings from this study have been widely quoted throughout the literature of language acquisition in support of two different views. One view (e.g., Pinker 1984; 1989) insists that this study provides evidence that children's grammatical mistakes go uncorrected, and thus 'there is probably no information available to the child as to the grammaticality of his or her utterances' (Pinker 1989:105). The other view (e.g. Saxton 1997) holds that findings from this study 'serve to rule out one possible source of negative evidence ... [but] not ... to confirm or disconfirm the existence of any other possible forms of correction' (Saxton 1997: 142).

I agree with Saxton (1997) in that I believe, if a child's interlocutor intends to correct the child's grammatical mistakes, then the interlocutor can possibly have at his/her discretion a number of ways to correct, which include, but are far from limited to, disapproval or overt correction. In the terminology of Relevance Theory, this is to say that in order to achieve her communicative intention, a communicator has at her discretion 'one of a range of different stimuli which would all make her particular informative intention mutually manifest' (Sperber and Wilson 1995:157). In this sense, the claim that children are not corrected (e.g., Pinker 1984; 1989), which is based on the finding that one type of corrective speech, i.e., overt correction, is not available, is somewhat premature.

In spite of this, Saxton (2000), like many other scholars, such as Messer (2000) or Morgan, Bonamo and Travis (1995), seems to accept that the type of corrective speech named disapproval or overt correction is realised only in the forms hypothesised by Brown and Hanlon (1970), namely, *That's wrong*, *That's incorrect*, etc. But according to scholars in other disciplines, such as Jefferson (1987) in Conversational Analysis, the following forms (B's first turn of speech in [5] and [6]) also overtly correct a previous speaker's mistake; however, their counter-parts, as in [7] and [8], are observed as well when parents address their language-acquiring children:⁴

[5]

A: And they told me how I could stick a th-uh:: Thunderbird motor? (0.5) in my Jeep? And I bought a fifty five Thunderbird motor.

[

B: Not motor, engine. You speak of electric motor and a gasoline engine.

[

A: Okay. Engine. Okay-

(Adapted from Jefferson 1987:87)

THE PRAGMATICS OF CORRECTIONS

[6]

A: I guess they paid two-twenty thousand for the house and two thousand for the ki:l.

B: (It's a) Kiln.

A: Kil:n, I don't know how to say it,

B: You always say kil.

A: I don't know I thought that's right t.

(Adapted from Jefferson 1987:88)

[7]

Child: We just have to (?) now, because there's no more persons.

Mother: Not no more persons. No more (.) people. Well, I, there is a tractor. What colour would you say that tractor is.

Child: Purple.

(02JA)

[8]

((*child playing with a set of toy people and letting them marry each other*))

Child: These ones are both, these ones are marrying. And these ones are marrying. Because that one is marrying that one. And this one is marry that one.

Mother: Marry(.)ING. Oh, right.

Child: ((*singing*))

(02SC)

In [5], as well as in [7], the correcting speaker uses the form *not X* (*X = the wrong item*), *Y* (*= the correct alternative*) whereas in [6], as well as in [8], the correcting speaker uses the form *Y*. In Jefferson's words, utterances in these forms of speech 'are ... occupied by the doing of correcting. That is, "correcting" is now the interactional business of these interchanges' (1987:88). It thus follows that if Brown and Hanlon's (1970) hypothesised forms of disapproval disapprove of a child's mistake, then these forms of speech not just disapprove of a mistake in question, but also provide a correct alternative. Consequently, if the forms studied by

Brown and Hanlon have the function of pressing a child to switch 'from immature to mature forms' (1970:202), then those forms (as in [5], [6], [7] and [8]) are even better for this function and need also be studied. Since Brown and Hanlon (1970) do not hypothesise, nor study, the availability of these forms in speech to children, their claim that overt correction is not available (a claim based on the unavailability of a limited number of speech forms) is not justified.

In my belief, the reason that Brown and Hanlon fail to enlist all possible forms of speech is their limited understanding of the form-function relationship in communication: they restrict the corrective function of speech to just one form and fail to realise that a whole range of forms may have this function in the context of a child's ungrammatical speech.

4.2. Recasts

The term 'recast' is first used by Bohannon and Stanowicz (1988), and then formally defined by Bohannon, Padgett, Nelson and Mark (1996). Corrective speech referred to in this way is thus far the one most studied (but in my belief the least clear in description) among the various types of speech that the acquisition literature has claimed to have a corrective function.

Throughout the literature on language acquisition, terms such as *expansions* (e.g., Brown and Bellugi 1970; Brown, Cazden and Bellugi 1970; Snow 1986; Penner 1987; Morgan and Travis 1989), *expanded repetitions* (e.g. Demetras, Post and Snow 1986), *verbal feedback* (e.g., Carroll 1995), *negative evidence* (e.g., Saxton 1997; 2000; Marcus 1993), *corrective repetitions* (e.g., Strapp 1999), *reformulations* (e.g., Ochs and Schieffelin 1995; Chouinard and Clark 2003), have all been used to refer to the type of corrective speech similar to, or the same as *recasts*. When I examined the descriptions of the corrective speech named by this variable terminology, I found two common features of the speech under discussion. One is that a correct form is present when the speech

is compared with a child's speech. The other is that there is some kind of semantic relationship between the linguistic string of the speech and a child's ungrammatical speech. Below, I show this is the case for corrective speech with regard to these various terms, and then point out what has been left undone in the investigation with regard to how corrective speech can lead a child to recognise the corrective information it contains.

(1) The speech referred to as *recast*

As seen from Table 2a, Bohannon and Stanowicz (1988), Farrar (1992), and Morgan, Bonamo and Travis (1995) all state that an adult's recast keeps unchanged the semantic or propositional meaning of a child's ungrammatical speech; the only change the recast makes is of the ungrammatical form that is used by a child in his previous speech. For example, when a child says *That be a monkey*, his grammatical mistake is, according to Bohannon and Stanowicz, in the use of the form of copula *be*. And when an adult responds to the child's speech with *That is a monkey*, the response, according to Bohannon and Stanowicz, recasts or changes the child's form *be* into *is*, but it preserves the propositional meaning of the child's erroneous speech, and fully overlaps with the meaning of the child's speech. Because of these two features of the adult's response, Bohannon and Stanowicz claim the adult's responsive speech has a corrective function.

From Farrar (1992), who explicitly quotes Bohannon and Stanowicz for his definition of recasts, I understand that recasts in Bohannon and Stanowicz's sense include not only the replacing of a form present in a child's speech, but also the recovery of a form absent from a child's speech. In both situations, the meaning relationship between the recast and the child's speech is that the semantic meaning of the recast fully covers that of the child's speech.

Author(s)	Descriptions	Examples
Bohannon and Stanowicz (1988)	the adult preserves the child's meaning but replaces elements of the child's utterance (p. 685).	'That is a monkey (vs 'That be monkey)
Bohannon, Padgett, Nelson and Mark (1996)	An adult 'expands, deletes, permutes, or otherwise changes the [child utterance] while maintaining significant overlap in meaning' (p. 551).	'The dog is running (vs the dog running)
Farrar (1992)	Refer to Bohannon and Stanowicz (1988).	'That is a doggy (vs 'That doggy); 'That's for climbing and it's called a ladder (vs 'That climbing)
Strapp and Federico (2000)	A repetition of their [i.e., children's] speech that includes corrections (p. 274).	'See the ball (vs 'See ball)
Morgan, Bonamo and Travis (1995)	Refer to Penner (1987) and Bohannon and Stanowicz (1988).	

Table 2a: *Recasts*

For Bohannon, Padgett, Nelson and Mark (1996) and Strapp and Federico (2000), recasts include not just forms of responsive speech that change a child's ungrammatical form and fully overlap with the child's ungrammatical speech in meaning, but also forms of responsive speech that change a child's ungrammatical form, while having a certain amount of overlap in meaning with a child's ungrammatical speech. So the rationale for these scholars appears to be that, since a recast, in their terminology, contains a form replacing a child's ungrammatical form and shares a certain amount of meaning with a child's ungrammatical speech, the recast has a corrective function.

Therefore, for the scholars quoted in Table 2a, what contributes to the corrective function of recasts is the presence of a correct linguistic form and the overlap of semantic meaning between corrective speech and a child's erroneous speech. Accordingly, as long as these two aspects can be identified in a case of corrective speech, the speech would lead a child to recognise the corrective information.

(2) The speech referred to as *expansion*

As described by Brown and Bellugi (1970), Brown, Cazden and Bellugi (1970), Snow (1986) and Morgan and Travis (1989), 'expansions' are defined solely at a linguistic level. These scholars are interested in the order of words in both a child's and an adult's speech; on this basis, a comparison is made between what words are absent in a child's speech and what words are present in an adult's expansion. In this sense, expansions resemble the recasts that I reviewed above, because they both point to the importance of the correct linguistic form in an adult's response.

With regard to the meaning relationship between expansion and a child's ungrammatical speech, what the scholars under discussion imply is a full overlap of meaning between expansive speech and erroneous speech. From the definition of expansion given by Brown and Bellugi, we see that their conclusion as to what is present in expansion and absent in a child's speech is the result of mapping an expansion onto a child's erroneous speech. This suggests the scholars must have assumed that an adult's expansion and a child's speech share the same propositional meaning. Hence, I take the view that the expansions described by Brown and Bellugi (1970), and Brown, Cazden and Bellugi (1970), resemble the recasts described by Bohannon and Stanowicz (1988), which I have just reviewed.

Author(s)	Descriptions	Examples
Brown and Bellugi (1970)	'The words spoken by the mother preserve the order of the words in the child's sentences. To be sure, words and inflections are added but they are fitted in – before, and after, and between the words the child used; they are not generally permitted to disturb the order of the child's words' (p. 86).	<i>Baby is in the highchair</i> (vs Baby highchair)
Brown, Cazden and Bellugi (1970)	Same as above.	<i>Yes, the dog is barking</i> (vs Dog bark)
Snow (1986)	'Full correct realization of the child's intended meaning at the time the child wishes to communicate that meaning' (p. 81).	<i>Pancakes away in the stomach, yes, that's right</i> (vs pancakes away duh duh stomach)
Penner (1987)	'repeated all or part of the [child] utterance and made grammatical or semantic changes to words and morphemes in the utterance' (p. 383).	<i>The ball fell down</i> (vs ball fall)
Morgan and Travis (1989)	Expanding the child utterance (cited in Marcus 1993:85).	<i>Where is the stick?</i> (vs Where other stick?)
Morgan, Bonamo and Travis (1995)	Refer to Penner (1987) and Bohannon and Stanowicz (1988).	<i>See the ball</i> (vs See ball)

Table 2b: *Expansions*

THE PRAGMATICS OF CORRECTIONS

In the definitions by Morgan, Bonamo and Travis (1995) and Penner (1987), expansion changes a child's ungrammatical form, but repeats all, or part, of a child's speech (Penner 1987; Table 2b). Because of this, expansion in these authors' sense resembles the recasts defined by Bohannon, Padgett, Nelson and Mark (1996) and Strapp and Federico (2000) (see above).

(3) The speech referred to as *expanded repetition*

Author(s)	Descriptions	Examples
Demetras, Post and Snow (1986)	a correction of a child's utterance with appropriate syntax or morphology (cited in Marcus 1993:83).	<i>Daddy's house</i> (vs Daddy house)
Bohannon and Stanowicz (1988)	'The adult reproduced major elements of the child's utterance and added new information' (p. 685).	<i>The monkey is climbing to the top of the tree</i> (vs Monkey climbing)

Table 2c: *Expanded repetition*

Although Demetras, Post and Snow (1986) only regard the presence of a correct form as important, their definition of the type of speech named 'expanded repetition' and their examples suggest that the corrective speech they study resembles Bohannon and Stanowicz's recasts (Table 2a) and Brown and Bellugi's expansions (Table 2b). As Demetras, Post and Snow's definition indicates, the type of corrective speech of interest to them 'represent[s] a correction of a child's utterance with appropriate syntax or morphology'. The corrective speech in question provides the child with appropriate syntax or morphology, which suggests a correct linguistic form is present. And since the speech in question represents a correction of a child's

utterance, this suggests the speech repeats or keeps unchanged other elements of the child's utterance, except for the inappropriate syntax or morphology. This understanding of the above authors' definition also gains support from the examples the authors provide. As seen in Table 2c, the corrective utterance *Daddy's house* only recovers the missing possessive inflection 's, but keeps the rest of a child's ungrammatical utterance unchanged.

With regard to Bohannon and Stanowicz's expanded repetition, we can see they separate this type of corrective speech from the speech they define as recasts (Table 2a). However, if we compare their definition of expanded repetition (as well as their examples) with that of recasts in the sense of Strapp and Federico (2000: Table 2a), or with that of expansions in the sense of Penner (1987: Table 2b), we can see what Bohannon and Stanowicz regard as important in expanded repetition is, as in the case of recasts in their sense, still the presence of a correct form and a meaning overlap.

(4) The speech referred to as *verbal feedback*

This term is typically used by Carroll (1995) to refer to corrective speech addressed to language learners, especially in second language acquisition. Table 2d presents the relevant information:

Author(s)	Descriptions	Examples
Carroll (1995)	'Explicit and implicit forms of verbal feedback, correction and other forms of so-called <i>negative input</i> ..., that is, information about what strings, forms, rules, or constraints are not part of the grammar ...' (pp. 74-5).	<i>Unter dem Waschbecken</i> (<i>under the + DAT sink</i>) (vs Die ist untern die Waschbecke (ART is beneath the sink))

Table 2d: *Verbal feedback*

Unlike many other authors in the acquisition literature, Carroll emphasises that, in order for a language learner to recognise the corrective information in corrective speech, he needs to regard corrective speech as irrelevant to his discourse topic, that is, to the propositional meaning of his ungrammatical speech. Carroll proposes the learner needs to recognise corrective speech as relevant to a form that he has used previously. This implies that the learner recognises the meaning relationship between verbal feedback and a child's erroneous utterance in a special way, namely, as that between a correct form and an erroneous form. Thus, while other authors in the acquisition literature ambiguously highlight the importance of a certain amount of meaning overlap between corrective speech and a child's erroneous speech, Carroll pinpoints the meaning relationship between two forms as a highly important aspect of such meaning overlap.

With regard to the speech form referred to as verbal feedback, an important feature of the speech that Carroll identifies (as do the other authors) is a *correct form*. She says a learner needs to recognise the correct form as related to his erroneous form. Carroll distinguishes between explicit and implicit feedback; she uses the term 'explicit feedback' to refer to Brown and Hanlon's disapproval (1970; see Section 2.4.1, above), and the term 'implicit feedback' to refer to all other forms of speech that contain a correct form. Because of this, I suggest the verbal feedback in Carroll's sense resembles the speech referred to as recasts by Strapp and Federico (2000), or by Bohannon, Padgett, Nelson and Mark (1996). (See Table 2a).

Also, for Carroll, what seems to be important is the presence of a correct form, and the meaning relationship between a child's speech and an adult's verbal feedback; in addition, she pinpoints the *type* of meaning overlap that is important for a learner's interpretation of correction.

- (5) The speech referred to as *negative evidence*

Author(s)	Descriptions	Examples
Saxton (1997; 2000)	refer to Bohannon, Padgett, Nelson and Mark (1996).	<i>Yeab, he sounds like the worst</i> (vs He was the baddest one); <i>Better</i> (vs I say it gooder)
Marcus (1993)	refer to Brown and Bellugi (1970) and Bohannon and Stanowicz (1988).	<i>The ball fell down</i> (vs The ball falled down)

Table 2e: *Negative evidence*

As Table 2e shows, Saxton (2000) explicitly equates the speech that he terms 'negative evidence' with the speech termed as recasts by Bohannon, Padgett, Nelson and Mark (1996; Table 2a). And Marcus (1993) explicitly equates what he terms as negative evidence with the speech termed as recasts by Bohannon and Stanowicz (1988; Table 2a) and expansions by Brown and Bellugi (1970; Table 2b). This suggests that for Saxton and Marcus, the speech they study would inherit the features that the authors they quote identify as important, namely, the presence of a correct form and some kind of meaning overlap between a child's speech and an adult's speech.

Ochs and Schieffelin's (1995) definition of *reformulation* very much resembles Snow's (1986) definition of *expansion* (see Table 2b), inasmuch as they all take the corrective speech they study as a candidate understanding of what a child intends to say via his ungrammatical speech. At the same time, these scholars also take it that this speech corrects a child's grammatical error. This indicates that, in the belief of these scholars, the importance of studying reformulation as correction is that there is in fact a correct form available in the speech, and there is a full overlap between the meaning of the corrective speech and that of a child's speech.

(6) The speech referred to as *reformulation*

THE PRAGMATICS OF CORRECTIONS

Author(s)	Descriptions	Examples
Ochs and Schieffelin (1995)	'candidate understanding of child's intended meaning' (p.82).	---
Chouinard and Clark (2003)	'the utterances adults use in checking up [on what children intend to say]' (p.642); also refer to Jefferson's (1987) embedded correction	<i>You went to school with your brother?</i> (vs 'I go to school'. As the reply to 'What did you do?')

Table 2f: *Reformulation*

Chouinard and Clark (2003), when characterising reformulation as 'checking up' on what a child intends to say through his ungrammatical speech, suggest, as do Snow (1986; see Table 2b), Bohannon and Stanowicz (1988; see Table 2a), Marcus (1993; see Table 2e), and others, that what is important for a child's recognition of a correction is the full meaning overlap between an adult's corrective speech and a child's ungrammatical speech. At the same time, they point out that such corrective speech replaces a child's error, which shows they take the presence of a correct form as another important feature of the speech in its function as correction.

(7) The speech referred to as *corrective repetition*

Author(s)	Descriptions	Examples
Strapp (1999)	'repetitions that corrected a child's error' (p.382).	<i>That's for climbing and it's called a ladder</i> (vs 'That climbing'); <i>Brush the pony's hair</i> (vs 'Brush pony hair')

Table 2g: *Corrective repetition*

Strapp (1999), in line with Strapp and Federico (2000; see Table 2a), points out two important aspects in the study of adults' speech as correction. First, the speech repeats what a child says. Although Strapp does not explicitly say to what extent the speech repeats what a child says, it is evident from her article that what she means is any extent of repetition, as long as some kind of repetition is identifiable. Second, the speech corrects a child's grammatical error. So, like all the researchers I have reviewed so far who study the kind of responsive speech which contains a correct form, Strapp identifies these two features of corrective repetition as important.

To summarise, the literature of language acquisition regards two characteristics of corrective speech as important. One is the presence of a correct form. The other is the meaning overlap between corrective speech and a child's ungrammatical speech.

I argue that the categorisation of these two characteristics only has very limited power in explaining why an adult's responsive speech carrying these two features has a corrective function, and how a child will use the corrective information to remove or correct his grammatical mistakes.

First, I believe the categorisation of a correct linguistic form homogenises different situations in which the correct form is spoken to a child. The following two cases of speech, observed by Wang (2005), illustrate this:

[9]

Child: What was it look like?

Mother: What did (.) WHAT look like?

Child: The CAke.

(02LA)

[10]

F: What's this.

C: Teapot.

F: ° a ([ə])° (.) 'TEAPOT', and what's this.

C: ° a ([ə])° (.) FLOWER.
(01EB)

These two examples of speech exemplify all the definitions of corrective speech given in Tables 2a-g which point to the availability of a correct form, and thus would fall in any type of corrective speech that is categorised as such in the literature. In [9], the correct form is the auxiliary *did* and in [10], the correct form is the indefinite article *a*. Apart from this, the meaning of both these cases of corrective speech fully overlaps with that of the corresponding ungrammatical speech. If we follow this approach (as done by the scholars I quote in Tables 2a-g), we would conclude these two cases of corrective speech are of an identical type.

However, I suggest that, for a number of reasons, these two cases of corrective speech are different from each other. One is that the two corrective forms in question are uttered in different ways. As my transcript shows, the corrective form in [9] does not carry the prosodic feature of the corrective form in [10]. The other reason is that the extent to which a child's attention will be drawn to the corrective forms in question also is different. When one compares [9] and [10] with Jefferson's (1987) data of corrective speech, one will find that the corrective speech in [9] is a case in which correcting is a mere by-the-way business, and therefore does not explicitly demand a hearer's attention. By contrast, the corrective speech in [10] is a case in which correcting is the interactional business itself, which therefore explicitly calls for a hearer's attention. The third reason is that the interactional consequences of these two cases of corrective speech are different. As evident in [9] and [10], corrective speech that has correcting as a by-the-way activity is not as effective in leading a hearer to recognise the correction as is corrective speech that has correcting as the interactional activity.

I argue that, if parents' corrective speech plays a beneficial role in children's recovery from grammatical mistakes, then cases of corrective speech like that in [9] will need to be distinguished from cases of

corrective speech like that in [10]. But since the scholars reviewed in Tables 2a-g do not distinguish between these cases, their claim that the corrective speech that they study functions as negative evidence is not fully justified.

I also argue the reason such a distinction is not made is that these scholars did not treat corrective speech as spoken utterances. Since '[a]n utterance has a variety of properties, both linguistic and non-linguistic' (Sperber and Wilson 1995:9), we need to take into consideration both the linguistic and the non-linguistic features of corrective speech when we examine the corrective function of a correct form. Take [9] and [10] as a case in point again. If one takes the different prosodic features of the two corrective forms into consideration, then one would categorise the two cases of corrective speech as being of different types, for example, embedded correction and exposed correction, as categorised by Jefferson (1987). But if one disregards these prosodic features, and judges their corrective function solely on the basis of the presence of a correct linguistic form and an overlap in propositional meaning between two linguistic strings, one would treat them as being of a single type. I would suggest the latter is what happens in the literature of language acquisition, as shown in the following quotation:

[T]he repetitious contrasts [i.e. recasts] in our study ... offer language learners not only simple error detection but also information as to correct (or at least acceptable) alternatives. In this light, repetitious feedback by adults may be considered ... as qualified to assume the role 'negative evidence'. (Bohannon and Stanowicz 1988:688)

Of note is the fact that, in their claims about the corrective function of corrective speech, some scholars in the acquisition literature also use the term 'utterance':

When the child produces an utterance containing an erroneous form, which is responded to immediately with an utterance

containing the correct adult alternative to the erroneous form ..., then the child may perceive the adult form as being in contrast with the equivalent child form. (Saxton 2000:224)

However, I would argue what these scholars mean by 'utterance' is still a string of words that does not carry with it the contextual features, such as prosody, that the corrective forms in [9] and [10] do. For example, in the above quotation, when Saxton discusses the corrective function of an adult corrective speech, he only attributes this to the 'correct adult alternative', which, as in the case of Bohannon and Stanowicz above, is a linguistic form in contrast to a child's erroneous form. He does not discuss how the features of the correct adult alternative as part of a spoken utterance, for example, as in the sense of Sperber and Wilson (1995), would lead a child to perceive the presence of the correct alternative.

Of note also is the fact that, when I suggest the scholars in the acquisition literature do not study corrective speech as spoken utterances, I do not mean these scholars make no consideration at all of the non-linguistic characteristics of corrective speech. Instead, I believe they only have a limited consideration of the non-linguistic characteristics of corrective speech. For example, when Bohannon and Stanowicz (1988; see Table 2a) categorise *That is a monkey* as a correction of *That be a monkey*, they must have assumed the adult-child interaction happens in a context where there is only one monkey, and thus the correct form of *be* in that context needs to be *is* instead of *are*. However, what they do not appear to have taken into account is that, although this non-linguistic characteristic is important for studying the speech in question as correction, there are other non-linguistic properties of corrective speech, such as the prosodic features carried by the correct form in [10], which distinguish the strength of the corrective speech to indicate a correction and/or the locus of a child's error. Because of this, I suggest the approach adopted by these scholars is inadequate to explain the corrective function of corrective speech addressed to a child.

My view is, therefore, that we must study all types of characteristics of parental corrective speech which would lead to a hearer's recognition of a correction. In proposing the possible characteristics of utterances that may guide a hearer's interpretation, Blakemore (1994:198) states that:

there is a range of linguistic devices, from example, intonation, word order, expressions ... which guide the interpretation process in different ways. ... [I]n the case of all utterance interpretation, what is encoded by the linguistic form of the utterance is only a set of hints for constructing an interpretation. There are always aspects of interpretation which are not linguistically encoded and which must be worked out on the basis of the context and pragmatic principles.

In line with Blakemore, I take the stance that, in parental corrective speech, it is not just the presence of a correct linguistic form, but also the use of some other linguistic devices (e.g., syntactic and/or lexical and prosodic) that guide a hearer's recognition of correction. The corrective speech in [9] illustrates the use of syntactic devices, that is, the use of a *wh*-question word. There, the use of the second *what*, along with its prosodic features, takes a child's attention away from the corrective form *did*. The corrective speech in [10] illustrates the use of prosodic devices, that is the use of whispering and holding pauses. The use of these prosodic strategies directs a child's attention to the corrective form *a*. I argue that the features of the corrective speech in [9], as compared with [10], would be less likely to cause a child to recognise the correction it contains.

Having shown that focusing on a correct linguistic form cannot yield a sufficient explanation of how the corrective function of corrective speech is recognised by a child, I now discuss the other factor which previous scholars have regarded as important. This is the meaning overlap between an adult's corrective speech and a child's erroneous speech. In my opinion, when an adult's responsive speech containing a correct form is compared with a child's ungrammatical

speech, we may recognise two types of meaning overlap. The first type is the semantic relationship between a correct form and an erroneous form, for example, the meaning overlap between the form *is* and *be* in *That is a monkey*, which is a recast of *That be a monkey* (cf. Bohannon and Stanowicz 1988; see Table 2a). For convenience of discussion, I call this CR-overlap (for 'correctional recast'). The second type of overlap is the semantic relationship between a corrective utterance and an erroneous utterance. For example, *That is a monkey* and *That be a monkey* share the same proposition in the interactive context, which is the identity relationship between a monkey and a particular animal in sight; I call this PR-overlap (for 'propositional recast'). I argue that, in order for a child to recognise the correction that is supplied in corrective speech, there is a need to determine which of these two types of meaning overlap is essential.

In my opinion, if it is the CR-overlap that draws a child's attention, then the child would be led to analyse the relationship between an adult's form and a child's form. That is, the child would be led to assume the adult's speech targets his erroneous form. If, on the other hand, it is the PR-overlap that draws a child's attention, then the child would be led to analyse the relationship between his discourse topic and an adult's topic. Take the corrective speech *That is a monkey* (versus *That be a monkey*) as a case in point again. If it is the meaning relationship between *is* and *be* that catches a child's attention, then the child would be led to analyse the relationship between the two forms. If it is the meaning relationship between *That is a monkey* and *That be a monkey* that catches a child's attention, then the child would be led to analyse the relationship between the two propositions. Since the assumption that corrective speech addresses an erroneous form is crucial for a learner to recognise a correction that is supplied (Carroll 1995; Section 3.3), I claim that the CR-overlap is the crucial cue that guides a child's recognition of the corrective function; we therefore need to examine how a child's attention is drawn to this aspect of meaning overlap.

I believe the CR-overlap has not been previously discussed in the acquisition literature in general. Instead, extensive emphasis has been on the general meaning overlap, that is, the PR-overlap, between a child's ungrammatical speech and an adult's corrective speech. As a result, we are led to assume it is this type of overlap that is important for a child's recognition of correction. This assumption is particularly strengthened by a predominant number of examples like the following:

[11]

Child: The dog running.

Adult: The dog is running.

(Farrar 1992; see Table 2a)

[12]

Child: Monkey climbing.

Adult: The monkey is climbing to the top of the tree.

(Bohannon and Stanowicz 1988; see Table 2c)

In [11], the adult's speech is claimed to be corrective by Farrar (1992), who, in line with Bohannon and Stanowicz (1988), characterises it as preserving the child's meaning. In [12], the adult's speech is claimed to be corrective by Bohannon and Stanowicz (1988), who characterise it as preserving the child's meaning and also adding new information. In both cases, the researchers do not specifically discuss what aspect of the child's meaning is preserved. In the absence of further specification, it is more likely that the meaning preserved is the propositional meaning of the child's utterance, and thus it is more likely that this is what the researchers take as important in the recognition of the correction.

My literature survey shows this reference to the PR-overlap is generally the case for most studies of corrective speech (see Tables 2a-g). The only exception is Chouinard and Clark's (2003) more recent research on parental corrective speech, where the overlap of meaning is explicitly referred to as the sameness of meaning between a child's

error and an adult's correct form. And it is explicitly acknowledged that '[s]ameness of meaning is critical' for a child in order to recognise the correction contained in a parent's reformulation (p. 643). Despite this progress, these scholars do not differentiate between the various situations in which this sameness of meaning is indicated to a child, such as those illustrated in [9] and [10] above. Instead, when they propose that '[a]dult reformulations ... indicate to children that ... they have made a grammatical mistake..., the locus of that error, and ... the form needed to correct it' (p. 643), the scholars seem to homogenise the various ways in which the sameness of meaning between an erroneous form and a reformulated form is indicated.

This brings us back to the first issue discussed earlier. Since what a child hears is the speech form, a child will not be led to analyse the CR-overlap unless the linguistic and non-linguistic features of the speech form guide him to do so. In other words, if a child's attention is drawn to a corrective form, then it is more likely that he will be led to analyse the meaning relationship between the corrective form and his erroneous form than if his attention is drawn to a constituent other than the corrective form. Consequently, if the child is able to arrive at the assumption that the two forms overlap in meaning, then the child would assume that the corrective speech is about his erroneous form. Take [9] and [10] above as cases in point. In [9], since the child's attention is drawn to *what*, the child would be led to analyse the meaning relationship between *what* and *it*. In [10], since the child's attention is drawn to *a*, the child would be led to analyse the meaning relationship between the absence and presence of this word. Evidently, if we were to analyse how beneficial a parent's corrective speech is to a child's grammar learning, we would hope that a child's attention is drawn to a corrective form and to the meaning overlap between this form and a child's erroneous form, as in the case of [10]. Thus, we are faced with the same task I discussed earlier: we need to sub-categorise corrective speech so that we can distinguish it according to its ability to indicate a correction.

In brief, the literature reviewed simplifies different forms of corrective speech and collapses them into one single type. When the authors in question attempt to identify the meaning relationship between a child's erroneous speech and an adult's corrective speech, they do not define clearly which aspect of meaning overlap is crucial for a child's recognition of the correction. My review also shows both these situations are a consequence of an approach which does not study corrective speech as speech or spoken utterances.

Since the relevant literature aims to investigate the beneficial role corrective speech plays in a child's recovery from his grammatical mistakes, I conclude that the approach adopted does not serve this aim. In order to examine the relationship between an adult's corrective speech and a child's recognition of a correction, we need to switch from sentence analysis to utterance analysis. Since the pragmatics literature has long engaged itself in studying the relationship between utterances and utterance meaning (e.g., Blakemore 1992; Sperber and Wilson 1986, 1995; Carston 2001), I suggest a pragmatic approach is necessary for the study of the relationship between corrective speech and a child's recognition of correction. This way, we will be able to distinguish types of corrective speech which vary in their relative capacity to lead a child towards recognising a correction.

4.3. Echo questions

The origin of the term 'echo questions' is attributed to Blakemore (1994), who analysed speech from a relevance-theoretic perspective. In the literature of language acquisition, the speech realised by echo questions in the context of a child's ungrammatical speech has been called *occasional questions* (e.g., Brown, Cazden and Bellugi 1970), *clarification requests* (e.g., Demetras, Post and Snow 1986), or *negative feedback* (e.g., Saxton 1997; 2000). Below are some illustrative examples ([4] is quoted earlier in Sections 1.1 and 3.3, but repeated here for convenience):

[4]

Child: Michael dad gave them to him.

Adult: Who?

Child: *Michael dad.*

Adult: Who?

Child: *Michael's dad.*

(Saxton 2000: 228; italics original)

[13]

Child: *Why* did they caught him when they ran away?

Adult: *Why* did they *what*?

Child: *Why* did they catch him?

(Saxton 2000:228; italics original)

In explaining how this type of speech may have a corrective function, Brown, Cazden and Bellugi take the view that since the wh-word pinpoints

the constituent which was the locus of unintelligibility, ... [a] large amount of structural information is revealed in these ... interactions with unusual clarity. (1970:151)

With regard to Saxton, his explanation is that

Negative feedback can prompt the child to attend to an ungrammatical form in a previous utterance, and apprehend it as such, in just those cases where the child has prior knowledge of its ungrammaticality. (2000:228)

In my view, when these researchers claim the type of speech under discussion has the function of indicating the locus of a child's error, or prompting a child to attend to an error, they have not acknowledged that this explanation is based on some inferential work. As I have shown in Section 3, the assignment of a function to a speech form

would not be possible unless one undertakes some inferential work. Acknowledging a child's inferential work in interpreting the corrective function of the speech form in [4] and [13] would then raise at least two questions:

The first question concerns the capacity of this type of speech to locate a child's error. Since this type of corrective speech pinpoints the locus of a child's error (as pointed out by Brown, Cazden and Bellugi 1970), I argue that the speech engages itself in talking about an erroneous form, and thus is a case of 'exposed' corrective speech, in the sense of Jefferson (1987; see Section 4.1). Since Brown, Cazden and Bellugi's intention in discussing the speech in question is merely to determine whether or not the speech has the function of correcting a child's grammar, it may suffice for them to give a positive or negative answer to the question. However, if we aim to investigate the actual relationship between corrective speech and negative evidence, then we need to go much further on the basis of their claim, so that we can examine the extent to which the corrective speech in question provides information about a child's grammar. That is, we need to determine the capacity of a form of corrective speech to provide such corrective information.

While Brown, Cazden and Bellugi do not discuss this question of capacity at all, Saxton's analysis seems to indicate he has a clear idea on the issue, viz., that this type of corrective speech does not strongly indicate a correction. My evidence for this assumption is that Saxton's distinction of two types of corrective speech, negative evidence and negative feedback, is based solely on the criterion of whether or not a form of corrective speech has a correct alternative. According to him, if a corrective alternative is present, then the speech is negative evidence in his terminology; but if a corrective alternative form is not present, then the speech is negative feedback in his terminology. Since the distinction between these two types of corrective speech aims to cast further light on the relationship between corrective speech and a child's recovery from grammatical mistakes (see Section 4.5, below), I believe what Saxton suggests is that the presence of a correct form

indicates a strong corrective capacity; by contrast, the absence of a correct form does not indicate such a strong capacity. My claim also gains support from Saxton's understanding of the corrective function of the two types of corrective speech. As he proposes, the presence of a corrective form provides a direct contrast to a child's erroneous form (see the relevant quotation in Section 2.4.2, above), whereas the wh-word only prompts a child to attend to an erroneous form (compare again the quotation above).

However, the above distinction is inappropriate for the study of the relationship between corrective speech and a child's recovery from grammatical mistakes. As I showed in Section 2.3, in order for corrective speech to be used by a child for the purpose of his grammar learning, the speech would first need to cause a child to realise his grammatical mistakes. Consequently, the extent to which a type of corrective speech leads a child to use the speech for the purpose of his grammar learning would need to be examined in accordance with the extent to which a child recognises its corrective information. In the context in which a child is assumed to know a correct form when he hears an echo question like the ones in [4] and [13] (as premised by Saxton in the above quotation), if the child's attention is drawn to his erroneous form, then the corrective capacity of this form of speech is comparable to cases in which a corrective form is present and a child's attention is drawn to the correct form, as in the case of [10]. It is therefore plausible to suggest that the corrective speech discussed in the present section (*viz.*, echo questions) is more capable of indicating a mistake to a child than Saxton had actually assumed. In other words, even though a corrective form is *not* present in parents' corrective speech, the speech may still strongly indicate a correction, contrary to what Saxton had presumed.

The second question which arises from the acknowledgement of a child's inferential work concerns the range of forms of speech having the function of locating an error. As pointed out both by Brown, Cazden and Bellugi and by Saxton, the corrective speech in question pinpoints the locus of a child's error, or leads a child to attend to his

error. If this is the interpreted function of the speech in the context of a child's ungrammatical speech, then I suggest there are also other forms of speech which lead to this interpretation, such as in the following case, observed by Wang (2005):

[14]

M: How do you know?

C: I just knowed.

M: You just (.) KNOWED (frowning, query eye gaze and teasing laughter)?

(02LA)

In the above exchange, the parent asks the child a yes-no echo question, as defined by Blakemore (1994). In so doing, the parent utters the child's wrong form *knowed* in an extraordinarily loud manner, when compared with her usual loudness in talking with the child. According to certain scholars (e.g., Blakemore 1994), this way of echoing a form has the function of explicitly signalling to a hearer that the form he has used is problematic. That is, the speech form in question has the function of locating an error. Thus, as in the case of overt correction (Section 4.1, above), the exclusion of forms such as in [14] by the above scholars reflects a limited understanding of the form-function relationship in language use. I claim that, as in overt correction, a clear criterion needs to be established in order for us to assess the corrective function of different forms of corrective speech directed to children.

4.4. Summary

In this section, I have shown how the approach adopted in the literature on language acquisition has distinguished corrective speech to young children as being of three types, namely, overt correction, recasts and echo questions. I have further shown how these three types of speech are distinguished in the relevant literature according to different

criteria. Firstly, overt correction is distinguished according to what is explicitly said by a parent; for example, *No, that is not correct*. Secondly, recasts are distinguished according to the presence of a correct form and the semantic relationship between corrective speech and ungrammatical speech. And finally, echo questions are distinguished according to how a child's attention may be directed to his error through the use of a wh-word. I have shown that this line of distinction has clear limitations in explaining how a parent's corrective speech would lead a child to realise and then correct his mistakes. I have shown that the fundamental reason for these limitations is that the relevant approach does not acknowledge the inferential work a child needs to undertake in order to recognise and exploit the corrective information that is provided. On this basis, I have indicated the need to acknowledge the inferential process on the part of a child who hears corrective speech, and therefore the need to differentiate corrective speech according to a consistent set of criteria. These criteria are the degrees of strength of different forms of corrective speech with regards to their capacity to locate a child's grammatical mistakes.

As I have suggested above, an approach which acknowledges a child's inferential work in using the relevant information in corrective speech for the purpose of his grammar learning is the relevance-theoretic approach (Sperber and Wilson 1995). In the next section, I review another important aspect of corrective speech that the approach in the acquisition literature has tackled, one which also lacks adequate explanatory power.

4.5. Positive effects of corrective speech

As I explained in Section 3, the ultimate aim of studying corrective speech is to examine it in relation to the concept of negative evidence and its importance for language acquisition. In the present section, my focus is on work which has been carried out on the issue of whether or not corrective speech is used by a child to correct his grammatical

mistakes. This issue has been addressed in regard to the 'positive effects' of corrective speech.

The term *positive effect* is borrowed from Morgan, Bonamo and Travis (1995) and Saxton (1997; 2000). It refers to the use of a correct form by a child after the child has heard corrective speech addressed to him. For example, in [13], reproduced below from the previous section, the parent's corrective speech has a positive effect because the child uses the correct alternative of *caught* after the auxiliary *did*.

[13]

Child: Why did they *caught* him when they ran away?

Adult: Why did they what?

Child: Why did they *catch* him?

(Saxton 2000:228; italics original)

If a child is not heard to use a correct form, as in the following case, then a case of corrective speech does not bring about a positive effect:

[15]

C: Horses running far.

F: >They are< running?

C: (happy voice) Ye::s.

(01EB)

Since in the relevant literature, corrective speech is distinguished according to whether or not a correct form is present, the positive effects of corrective speech have been studied according to the types of speech that are distinguished in this way. As my review in Section 4 shows, corrective speech is distinguished into recasts and echo-questions, since overt correction, in the sense of Brown and Hanlon (1970; Section 4.1, above), is not available in speech to young children. In the following two sections, I review the studies in the literature on the positive effects of these two types of corrective speech.

4.5.1. Positive effects of recasts

The characterisation of recasts as a type of corrective speech has led to the claim that such recasts offer 'language learners not only simple error detection but also information as to correct (or at least acceptable) alternatives' (Bohannon and Stanowicz (1988:688; see Section 4.2, above). In my opinion, this way of characterising recasts would lead to the conclusion that recasts generate positive effects on a child, regardless of the child's developmental stage. This is a point of view actually taken by Saxton (1997; 2000). In addition, when the positive effects of corrective speech are only attributed to the offer of both error detection and correct alternatives, but *not* to a child's inferential work, this could lead to the conclusion that recasts will bring about positive effects on a child on all occasions when they are available.

However, such conclusions are contradicted by the results from studies which examine the positive effects of recasts. Table 3 presents a summary of the relevant empirical studies in this area:

Studies	Speech type examined	Age of child subjects	Rate of positive effects (%)
Farrar (1992)	Recasts (cf. Tables 2a-g)	1;11	12.0
Morgan, Bonamo and Travis (1995)	Recasts (cf. Tables 2a-g)	Adam: 2;06~3;06 Eve: 1;06~2;04 Sarah: 2;03~3;08	(4 x 25% =)1 for Adam; (2 x 3/5 =) 0.60 for Eve ; 0 for Sarah
Saxton (1997)	Negative evidence (i.e. recasts, cf. Tables 2a-g)	5;00	29.6
Saxton (2000)	Negative evidence (i.e. recasts, cf. Tables 2a-g)	Eve: 1;06~2;03	7.8
Strapp and Federico (2000)	Recasts (cf. Tables 2a-g)	2;03	10.54

Table 3: *Positive effects of recasts*

Note: Adam, Eve and Sarah are the three subjects of Brown and his colleagues (1970). They have been also widely studied by subsequent researchers such as Morgan, Bonamo and Travis (1995) and Saxton (2000).

As the information in this table indicates, in all five studies which examine the positive effects of recasts on children, the rates of positive effects of recasts are uniformly under 100 percent. And apart from this, we see that generally, the older the child subjects are, the higher are the rates of positive effects.

However, it is from these very results that the researchers in question conclude that recasts play an important role in leading children to recover from their grammatical mistakes. This can be seen in the following quotations:

Farrar (1992:95):

The results of the study indicated that children were more likely to imitate the grammatical morphemes contained in corrective recasts than imitate the identical information contained in the other discourse categories. This suggests that negative evidence provided by corrective recasts is a very salient type of response to children's sentences.

Morgan, Bonamo and Travis (1995:180):

Data from longitudinal investigations of two common syntactic errors reveal that recasts are related to children's subsequent grammaticality.

Saxton (1997:156-7; emphasis original):

[t]he findings of the present study contribute to a growing body of evidence that children can and do identify RELEVANT points of contrast, despite what other differences may exist between child and adult utterances, and adopt the form favoured by the adult in place of their own version (Farrar 1992; Morgan *et al.* 1995; emphasis original).

Saxton (2000:221):

In light of these and related findings, it is argued that corrective input may well prove important in explanations for how the child eventually retreats from error to attain a mature system of grammar.

Strapp and Federico (2000:285):

[t]hese results support the conclusion [by Farrar 1992 and Saxton 1997] that when children get feedback regarding errors they revise their speech, but without such feedback they persist in their errors.

In my view, results from these studies provide only empirical evidence that language-acquiring children are able to perceive recasts as corrections, and therefore use the information contained in corrective speech. Since corrective speech, like recasts, always contains corrective information, there is the possibility a learner would interpret the speech as correction, and therefore use it to correct his mistakes (Carroll 1995). In other words, as long as corrective speech is available to a child, there is the theoretical possibility positive effects will occur.

This being the case, I believe the relevant literature has actually blurred the distinction between two of the three criteria for categorising corrective speech as negative evidence. As I explained in Section 3, in order for corrective speech to count as negative evidence, the speech needs to be available to, used by, and necessary for, the child. The studies I quote in Table 3 have taken the evidence for the second criterion as evidence also for the third criterion. Consequently, I believe their approach to studying the relationship between corrective speech and negative evidence is wrong.

However, if despite this, we still want to use the positive effects of corrective speech to determine whether or not such speech is necessary for a child's recovery from his grammatical mistakes, there is in fact a plausible resolution. This is that if parental corrective speech brings about no positive effects on a child, or only seldom does, then we may suggest the speech does not critically facilitate the child's recovery from grammatical mistakes. As I indicated in Section 1.1, a child completes the acquisition, whatever the actual process is. So if corrective speech is not, or seldom, effective, then this suggests a child's recovery from grammatical mistakes would critically need to be explained by drawing upon something other than corrective speech.

This leads us to a new question with regard to the information in Table 3. As we have seen, recasts bring about a higher rate of positive effects only in the study conducted by Saxton (1997). The rates of positive effects of recasts in other studies are very low, especially in the study of Morgan *et al.* (1995). In Section 4.3, I indicated that the recasts that are studied in the acquisition literature may in fact be of different types, differing in their relative capacity to locate an error. On this basis, I suggest the information resulting from a comparison of the rates of positive effects must raise the question as to whether or not the recasts the child subjects hear in such studies are of identical type in terms of their capacity to locate an error.

I argue that distinguishing corrective speech into types according to their relative capacity to locate a child's error is of vital importance for the study of the positive effects of such types of speech. As Sperber and Wilson point out,

the intended informative effect [of an utterance] does not generally occur, and thus cannot be generally observed, until *after* the underlying informative intention has been recognised. (Sperber and Wilson 1995:163; italics original)

In the case of corrective speech, this means that, before a child uses a correct form, that is, before positive effects occur, a child needs to recognise the speech in question as being a correction. It follows that the more likely a type of corrective speech leads a child to recognise a correction, the greater the likelihood that positive effects will occur. Putting this in a different way, the greater the strength of a type of corrective speech in its capacity to locate a child's error, the greater the likelihood that positive effects will occur. As the rates of positive effects resulting from the studies in Table 3 vary greatly, it is at least plausible that the corrective speech heard by the child subjects may actually be of quite different types.

This suggestion undoubtedly gains support from studies done generally on speech directed to children. According to the relevant

literature (e.g., Ervin-Tripp 1984; Aitchison 1989; 1998), a child's conversational partner adjusts her speech to that child according to the latter's developmental stages. So it is possible that corrective speech is also adjusted according to children's developmental stages, in terms of its strength to indicate a correction. This would in one sense explain the differences between the positive effects of recasts in the studies quoted in Table 3. Since these studies assume recasts are of a single type, regardless of a child's developmental stage, they cannot explain the results in terms of this theoretical framework.

Leaving this issue aside, another reason for the great differences between the positive effects of recasts in these studies could well be the ages or stages of the child subjects participating in the empirical studies in question. Just as children gradually acquire the grammatical system of a language, so they just as gradually also learn the ability to recognise recasts as corrections. As Sperber and Wilson also point out:

What counts as relevance ... varies with the way in which information is accessible, or can be accessible, to the addressee over time. It also varies with the degree of intellectual alertness of the addressee. (Sperber and Wilson 1995:161)

Here, I understand *the intellectual alertness of the addressee* as being indicated by a child's developmental stages. In the context of a child's ungrammatical speech, the relevance of corrective speech must be that it is a correction intended to be recognised by the child. Accordingly, since a child is developing, his ability to recognise a correction embodied in a specific type of corrective speech would of course vary at different stages. This suggests that if a child hears the same type of corrective speech, positive effects will occur at different rates at different stages. Although all the studies quoted in Table 3 deal with the positive effects of recasts among children of different ages/stages, not one of them explains their results in relation to the ages/stages of their child subjects. But this is something that any study on language development must explain, instead of avoiding the issue.

Based on my review of studies on recasts, my hypothesis is that both ages/stages of a child, and also the types of recasts in terms of their corrective power, play a crucial role in whether or not, and how frequently, recasts would bring about such positive effects.

Of note too is that in Table 3, I exclude the results of positive effects from the study by Chouinard and Clark (2003), which is the latest research in this area. This is because I strongly disagree with the way these scholars score the positive effects of a case of corrective speech.

For Chouinard and Clark,

[u]ptakes with repeats, rejections, acknowledgements, and mentions of new information all present evidence of overt attention by children to adult reformulations. (2003:655)

Consequently, they score a positive effect for the following case of corrective exchange:

[16]

Abe (2;5.14): my mommy cry.

Father: Mommy cried.

Abe: uh-huh you yelling.

(Chouinard and Clark 2003:657)

In this exchange, it is understood that the parent corrects the child's use of tense for the verb *cry*. Chouinard and Clark take the view that the positive effect happens because '[s]uch acknowledgements are a further indication that children monitor whether or not their intention has been captured accurately in a reformulation' (2003:657). In my understanding, however, when the parent acknowledges the child's previous speech, his speech makes at least two assumptions manifest (see Section 2.5, above):

- (a) the child's mummy cried;
- (b) the child's use of cry instead of cried is wrong.

Between these two assumptions, the stronger one is (a), as it indicates the parent has captured the child's intention. Assumption (b) indicates the child has made a grammatical mistake. When the child replies with *uh-huh you yelling*, this indicates the child is responding to assumption (a). In other words, the child's reply is evidence that the child has understood that the parent has also understood what he intends to communicate. If we want to obtain evidence that the child responds to the parent's correction, we would need to show that the child responds to assumption (b). But from the child's reply, clearly no such evidence is available. Consequently, the exchange under discussion cannot be regarded as a case where a child uses the corrective information supplied via the parent's reformulation. What limits Chouinard and Clark's research is, in my view, that they simply fail to analyse the number of assumptions a corrective speech makes manifest. Because of this, their approach is not able to assess precisely how corrective speech would affect a child's uptake. Consequently, I regard their results of positive effects as invalid, since they include cases that simply do not cause a child to realise his grammatical mistakes.

4.5.2. Positive effects of echo questions

As we have seen in the previous section, the positive effects of echo questions were studied only by Saxton (2000).

Following Saxton's (2000) view that this type of speech (negative feedback in his terminology) differs from recasts because of the absence of a correct alternative, one may fairly expect a lower rate of positive effects from echo questions. And this in fact appears to be reflected in the results from Saxton's study, though the actual difference between the two figures is not very big:

Empirical study	Rate of positive effects of negative feedback (%)
Saxton (2000)	6.6

Table 4: *Positive effect of negative feedback (i.e. echo questions)*

In the present context, I argue that, although the results from this study in one sense justify the specific theoretic analysis, the fact that Saxton only codes cases of corrective speech which contain a wh-question word for investigation (see Section 4.3, above) has as its consequence that a set of forms are excluded which have the same corrective function, but which may also be available to children, e.g., the speech in example [15]. More importantly, Saxton (2000) has not acknowledged that a child will need to undertake some inferential work in order to exploit negative feedback to actually modify his grammar. This is a methodological consequence of the approach in question, inasmuch as it lacks any clear, consistent criterion for categorising speech which may potentially be corrective, within the communicative context of a child's erroneous speech.

Consequently, just as in the case of recasts, I propose that negative feedback should be studied in such a way that its effect on a child's grammar learning can be properly predicted and carefully measured.

4.5.3. Summary

In this section, I have shown how the theoretical framework of previous studies on corrective speech fails to provide us with the necessary tools to explain the positive effects of corrective speech. I have also argued this is because the theoretical framework in question does not distinguish corrective speech in terms of the degrees of

corrective power which various forms of corrective speech may possess. Therefore, I propose that corrective speech should be studied with a view to assessing its corrective power, and that such a study should be able to predict its potential facilitating effect in causing a child to modify his grammar in accordance with this corrective power. In the next section, I argue that Relevance Theory provides us with an approach that can in fact do this.

5. The relevance-theoretic approach

As I have shown, in order for us to examine appropriately the relationship between corrective speech and a child's recovery from grammatical mistakes, it is necessary to study corrective speech in terms of the degree of strength (or power) inherent in a correction, as based on the actual form of the corrective speech. From a relevance-theoretic point of view, this strength reflects the relative amount of information a parent's corrective speech makes accessible for a child in order to recognise such a correction. Or, put in another way, the degree of strength or power inherent in a correction, as based on an actual form of corrective speech, reflects the degree of accessibility of the assumption that a child has made a specific grammatical mistake. It follows that the more accessible this assumption is to a child, the more likely it is the child will interpret the speech as being corrective, and consequently, the more likely the child will use the speech to correct his mistake.

On the basis of my critique of Carroll's (1995) proposal (Section 3.3, above), I propose that an inferential process is necessary in order for a child, as the hearer (H), to interpret the corrective speech by a parent speaker (S) as being corrective, and subsequently use it to correct his mistakes. This inferential process consists of three stages:

- a. both S and H observe the principle of relevance;

THE PRAGMATICS OF CORRECTIONS

- b. H infers that some aspect of S's contribution does not appear to be relevant to the on-going discourse topic, but does appear to be relevant to either H, or to a particular form, X, in H's previous speech;
- c. H infers that S has a corrective intention, that is, that S wants to say something about the form in H's previous speech.

Stage a is the starting point of the inferential process. Here, the parent (S) intends her corrective speech to be relevant to the child (H), or to bring about changes in the child's cognitive environment. And the child (H) is led by this presumption of relevance in his search for the relevance of the parent's (S's) speech.

Stage b is the process during which a child (H) identifies the set of assumptions the parent's (S's) speech makes manifest, and from which the informative intention can be inferred.

Stage c is the completion of the inferential process. The inference that the parent (S) has a corrective intention is a contextual implication, which the child (H) draws from the set of assumptions which he identifies at Stage b, and which the parent-child interaction makes manifest. Since 'a phenomenon may make manifest a very large number of assumptions' (Sperber and Wilson 1995:151), if a child (H) is to use the corrective information contained in corrective speech, then the child needs to make the particular inference that a parent's (S's) corrective speech is intended to correct a form he has just used. If the child (H) fails to make this particular inference, then his interpretation of the relevance of the parent's (S's) speech will be a different assumption.

Since a contextual implication derives from a synthesis of old and new information which includes the content and form of the previous utterance, as well as the content and form of the current utterance, I further propose that a child, as the hearer (H), needs to access the following set of assumptions, expressed through propositions, in order to infer that a parent, i.e., the speaker (S), has a corrective intention:

- (i) I, as H, used X in my speech just now;
- (ii) S's response indicates the use of Y;
- (iii) X and Y are the same in their semantic meaning but are different in their form;
- (iv) When S indicates the use of Y in the sense of (iii), she intends to inform me, as H, that form X is wrong and form Y is right.

Below is an example to illustrate:

[17]

C: But, but I stealed some,

M: [STOL:E. I: (.) STO:LE.

C: I stole some sticks, didn't I.

(02LA)

In this exchange, there are two cases of corrective speech addressed to the child in the parent's turn of speech. For convenience, I only analyse the first case, i.e., *STOL:E*, here.

In accordance with my proposed inferential process, a child would search for the relevance of the utterance *STOL:E* upon hearing it, in order to improve his cognitive environment. And if he is to infer the utterance as being intended to be a correction, he would need to undertake the following stages in the inferential process:

Stage a: the child, as well as the parent, assumes that the parent's speech is relevant to him and/or his previous speech;

Stage b: the child identifies the members of the set of assumptions that are made manifest in the interaction as: (a) the parent says *stole*; (b) the word *stole* appears to be relevant to the word *stealed* that the

child has used; (c) *stole* and *stealed* are semantically related, as they both refer to the past action of *steal*; (d) the parent's speech tells the child not to say *stealed*, but say *stole* instead;

Stage c: the parent has a corrective intention. That is, the parent intends to indicate that *stealed* is wrong and *stole* is right.

For my argument, it is crucial that the properties of a parent's corrective speech make accessible to a child Proposition (*i*), which is that the child (H) uses the form X, e.g., *stealed*, in his previous speech. This is because, if a child is led to assume that the corrective speech is relevant to a particular constituent that he has just used (i.e., X), then he would be motivated to determine how the corrective speech is relevant to that constituent. By looking for contextual information, a child is subsequently in a position where he would be able to decide whether or not the parent's speech is relevant to the form representing that constituent. In the above example, the parent's corrective utterance first makes manifest to the child the assumption that the parent intends to talk about the child's use of *stealed*. Subsequent to this, the child's access to his previous assumption, *The past tense form of steal is stealed*, leads him to conclude the speech is intended to correct his use of the form *stealed*, that is, the form representing the past tense of *steal*.

Also for my argument, a child's inferential abilities play a part for the likelihood that he will access Proposition (*i*), i.e., that the child (H) uses the form X, e.g., *stealed*, in his previous speech. Since a child is developing with regard to his inferential abilities (Ryder and Leinonen 2003), he may fail to access this proposition even though it is made strongly accessible in the corrective speech.

In order to distinguish corrective speech according to the degrees of accessibility of the assumption that a previous speaker has made a particular mistake, I borrow two notions from conversation analyst Gail Jefferson (1987). These are: 'exposed correction' and 'embedded correction'. In my view, these two notions capture what is meant by the degrees of accessibility in a relevance-theoretic sense, in that

Proposition (i) is made more accessible via exposed correction than via embedded correction. However, unlike Jefferson, I acknowledge an inferential process that is necessary for the categorisation of these two types of corrective speech, as will be shown in subsections 5.1 and 5.2 below.

5.1. Exposed correction

I use Jefferson's data below to illustrate her notion of exposed correction, and to explain how the relevance-theoretic approach provides evidence for this:

[18]

Jan: I guess they paid two-twenty thousand for the house and two thousand for the ki:l.

Ron: (It's a) Kiln.

Jan: Kil:n, I don't know how to say it,

Ron: You always say kil.

Jan: I don't know I thought that's right t.

(Adapted from Jefferson 1987:88)

According to Jefferson, Ron's utterance (*It's a) Kiln* in [18] is a case of exposed correction because

[w]hatever has been going on prior to the correcting is discontinued. Where prior utterances have been occupied with various ongoing matters, utterances are now occupied by the doing of correcting. That is, 'correcting' is now the interactional business of these interchanges. (p. 88)

However, Jefferson does not explain how she derives the above inference from B's utterance (*It's a) Kiln*. In my opinion, the inferential process which leads to her inference above looks like the following:

In the exchange above, Ron's utterance (*It's a) Kiln* responds to Jan's first turn of speech. To determine the relevance of Ron's speech, Jan needs to assign a unique propositional form to Ron's utterance (Sperber and Wilson 1995:179). In this particular exchange, the assignment only requires that a reference be assigned to the pronoun *it*. Jan may find three possibilities: *it* refers to the payment *they* make, or refers to *house*, or refers to *kiln*. But the resemblance between *kil* and *kiln* would guide Jan to accept the third possibility and rule out the other two, because this resemblance is more accessible, and therefore less costly in processing efforts. As put by Blakemore:

the principle of relevance entitles the hearer to expect that she can obtain adequate contextual effects for a minimum cost in processing. Processing costs are affected by the cost of accessing and using the context, so that the larger and less accessible the context, the greater the processing cost. (1992:124)

It is true that *it* may refer to the payment *they* make, or refer to *house*, but to reach these assumptions would involve accessing further contextual information which is not given or not accessible from Ron's speech, and thus entails more unjustifiable processing efforts. For example, if she tries the first possibility, Jan then may need to assume that *kiln* is a unit of measurement for money, and that this particular amount applies to both *the house* and *the kil*. Since this information is not immediately made manifest via either Ron's or Jan's speech, Jan would need to enlarge the context in order to access it, and thus put in some extra processing efforts. But if trying the third possibility, i.e., *it* refers to *kil*, Jan would only need to access the information that the *kil* and *kiln* are similar in their pronunciation. Since this information is immediately manifest just by processing Jan's and Ron's speech, Jan would need less processing efforts than when she approaches the other two possibilities. '[H]aving found an interpretation that yields adequate effects for no unjustifiable effort in a way the speaker could have manifestly foreseen, the hearer is entitled to accept this, and only this,

as the intended interpretation' (Blakemore 1992:124-5). Consequently, Jan would assume that Ron intends *it* to refer to *kil*.

Having recovered the propositional form of Ron's utterance, Jan would then identify the set of assumptions manifest in the context as: (a) I used *kil*; (b) Ron says *kil* is *kiln*; (c) *kil* and *kiln* are co-referential in the communicative context; (d) Ron used *kiln*; (e) Ron indicates that *kil* is a wrong form and *kiln* is a correct form.

From propositions (a) to (e), Jan would then draw the contextual implication that Ron intends to correct her use of *kil*.

Recall that Jefferson believes a speaker of exposed correction exposes a correction by occupying the corrective utterance with 'the doing of correcting' (1987:88; see the quotation at the beginning of this section). My analysis shows that this categorisation is due to the assumption that corrective speech leads a hearer to assume that the speech talks about Proposition (*i*) during the inferential process (see the beginning of Section 5, above). In other words, if a case of corrective speech leads to the assumption that it talks about a form that a previous speaker has used, then the speech would be interpreted by a hearer, or be categorised by an analyst, as being engaged in the 'the doing of correcting'.

5.2. Embedded correction

As in the case of exposed correction, I use Jefferson's example to illustrate her notion of embedded correction, and to explain how the relevance-theoretic approach provides evidence to support this:

[19]

Griff: Well I-uh didn't know anyone: that knew anything about kilns except you:.

J.R.: Whhhhuhhuh .hh Actually most've my experience's been in gas kilns though really.

Griff: I know it. That's what I keep telling myself. Why the hell do you fool with an electric ki(h)l when you can get a ga:s kil.
(adapted from Jefferson 1987:93)

According to Jefferson, J.R.'s speech in [19] is a case of embedded correction because

the talk in progress continues. ... That is, the utterances are not occupied by the doing of correcting, but by whatever talk is in progress. ... correction occurs, but is not what is being done, interactionally. (1987:95)

As I did above, in the case of exposed correction, I will now provide a relevance-theoretic account of the necessary inferential process that is not acknowledged in Jefferson's study.

To interpret the relevance of J.R.'s speech to Griff's topic, we need to know what Griff's discourse topic is. In this conversation, Griff starts the talk by saying to J.R., *Well I-uh didn't know anyone: that knew anything about kilns except you.* With the pronouns *I* and *you* being assigned a reference, the propositional form of this utterance can be paraphrased as *J.R. is the only person in Griff's knowledge who knows anything about kilns.* We can then interpret that as: By speaking so, Griff expresses his admiration of J.R.'s accomplishment in knowing all about kilns. This enables us to categorise the topic of Griff's speech as the paying of a compliment to J.R., as the utterance fulfils the conditions for a compliment (Herbert 1997:488).

Having interpreted Griff's first turn at speech as a compliment to J.R., we can now determine in what manner J.R.'s response is relevant to Griff's discourse topic. We first need to know what counts as a relevant response to a compliment. According to Herbert (1997:496), 'addressees [to whom a compliment is paid] are ... faced with the problem of acknowledging/accepting or rejecting/deflecting the offered praise...'. In other words, either accepting/acknowledging or rejecting/deflecting is a desired or relevant reply to a compliment.

Let us examine J.R.'s reply to Griff's first turn speech. Jefferson categorises this utterance as a continuation of Griff's topic (1987:94-5). Drawing upon Relevance Theory, we can now ask what kind of contextual information Jefferson needs to access in order to do so. The first clue will be J.R.'s utterance. The propositional form for this utterance is *'Most of J.R.'s experience has been in gas kilns'*. The recovery of the propositional form then makes immediately accessible at least the following contextual information:

- (a) Griff and J.R. are both aware that they are talking about the same referents;
- (b) the referents fall into at least two types: those that consume gas and those that consume fuels other than gas;
- (c) J.R. knows more about the type of the referents that consumes gas than the type that consumes fuels other than gas;
- (d) Griff previously knows that J.R. knows the gas type very well;
- (e) at the moment of the talk, J.R. is working with one of the referents that belong to the type that does not consume gas.

Since Griff has just paid the compliment to J.R. that J.R. knows something about kilns/kils, J.R.'s response, together with the accessed contextual information listed above, entitles Griff to infer J.R. has deflected his knowledgeability in reply to his compliment. This would lead Griff to assume J.R.'s speech is relevant to the discourse topic which Griff has just initiated.

This said, what leads Jefferson, or Griff, to assume that J.R. has also made a correction at the same time?

According to my model of the inferential process (see the beginning of this section), a hearer needs to access Proposition (*i*) in order to recognise a correction. That is, the hearer needs to access the

assumption that he has used the form X, e.g., *kiln*, in his previous speech. I have shown that the propositional form for J.R.'s speech is *Most of J.R.'s experience has been in gas kilns*. If J.R. also uses the word *kilns* as Griff does, Griff would construe J.R.'s speech as being relevant to his compliment, and would 'accept this, and only this, as the intended interpretation' (Blakemore 1992:124-5). However, the fact that J.R. uses a different term, *kil*, will lead Griff to process this extra bit of information, and search for its relevance in the interactive context. Provided that Griff perceives this extra bit of information, that is, the presence of the new term *kil*, he would then take a similar inferential route as Jan would do in [18], above, and derive the contextual implication that J.R. has a corrective intention.

Hence, we are talking about two contextual implications that a hearer would draw in the communicative context of corrective speech like that in [19]. One is that the speaker follows up on an on-going discourse topic. The other is that the speaker has an intention to correct a previous speaker's mistake. Among these two contextual implications, the first one is the stronger one. Or rather, in Blakemore's words, it is one of 'those fully determinate implicated conclusions and premises that the hearer is forced to derive in order to obtain an interpretation consistent with the principle of relevance' (1992:129). In contrast, the second contextual implication is weak. Or, still to use Blakemore's words, it is 'not necessarily the interpretation that [a speaker] specifically intended. It is simply a line of interpretation that is suggested by [the speaker's] utterance' (1992:129).

As my analysis shows, it is J.R.'s use of the new term *kil* which suggests he has a corrective intention. But since J.R. does not direct Griff's attention specifically to the use of this term, I argue that the assumption that J.R. has used this alternative form, or Y, is made weakly manifest to Griff. Because of this, the assumption that Griff has used *kiln*, or X, is also weakly manifest. And so is the assumption that X and Y, or *kiln* and *kil*, are co-referential. Since these three assumptions together forms the premises for the derivation of the assumption that J.R. has communicated a corrective intention, if the premises are weak

assumptions, then the conclusion, or the contextual implication, that J.R. has communicated a corrective intention, will also be weak. I therefore propose that what leads Jefferson to claim that corrective speech, like J.R.'s in [19], follows up on a previous speaker's topic is the fact that this assumption is a strong contextual implication which a hearer is specifically led to draw in the interactive context. I also propose that what leads Jefferson to claim that correction occurs in the speech in [19], but is not done interactionally, is the fact that this assumption is actually a weak contextual implication which a hearer is encouraged, but not specifically led, to draw in the interactive context.

This situation therefore contrasts with the situation of exposed correction. Earlier, I have shown that, as in example [18], a corrective speaker specifically directs a hearer's attention to a corrective form or a mistake. I believe that when a speaker does this, she indicates that the three assumptions, i.e., that a speaker uses Y, that a hearer uses X, and that X and Y have the same semantic meaning, are all made strongly manifest. Since these three assumptions are all premises for the derivation of the assumption that a speaker has communicated a corrective intention, then, if the premises are strong assumptions, the conclusion, or the contextual implication, that a speaker has communicated a corrective intention, will also be strong. It can thus be concluded that, in the case of exposed corrective speech, the strong contextual implication that a hearer is led to draw is the assumption that a speaker has a corrective intention.

Hence, the strength of the assumption that a speaker has a corrective intention differs by degrees in the situation of exposed correction and embedded correction. Specifically, this assumption has a greater strength in the case of exposed corrective speech than in the case of embedded corrective speech. And the reason is that, in the former situation, the corrective speaker talks about a mistake and thus exposes the evidence for a correction, whereas in the latter situation, the corrective speaker talks about an on-going topic, while embedding the evidence for a correction.

5.3. Positive effects of corrective speech in the first language acquisition process

The term *positive effect* (see Section 4.5, above), as used in studies on first language acquisition, is comparable to what Jefferson (1987) calls *conversational consequence*. According to Jefferson, since exposed correction talks about the correction, its conversational consequence is that a hearer talks about the correction as well. Thus, the conversational sequence of exposed corrective talk is as follows:

[20]
 A uses X
 ↓
 B indicates that X is wrong and Y is right
 ↓
 A uses Y, or abandons Y in the face of A.

On the other hand, since embedded correction only embeds correction, its conversational consequence is that either a hearer recognises the correction and therefore uses it to correct his mistakes, or a hearer fails to notice the correction and thus fails to use it. This being the case, two kinds of conversational sequences are possible, as follows:

Either:

[21]
 A uses X
 ↓
 B indicates that X is wrong and Y is right while talking about A's topic
 ↓
 A uses Y (as the result of recognising the correction).

Or:

[22]

A uses X

↓

B indicates that X is wrong and Y is right while talking about A's topic.

↓

A does not use Y (as the result of failing to recognise the correction).

This raises an issue. Jefferson seems to attribute the consequence of corrective speech largely to the corrective speaker, in that if the speaker exposes a correction, then the hearer will recognise the correction and never miss it. But if the speaker embeds the correction, then the hearer would either recognise the correction or miss it. I would like to argue that while this attribution may remain sound with data generated in conversations between adult or mature speakers, it is open to debate when applied to conversations between parents and their language-acquiring children. As is clear from the following example (almost identical to one of Jefferson's cases of exposed corrective speech, but observed in Wang 2005), the above way of analysing data is unable to explain what happens next to an exposed correction:

[23]

Mother: So if a snail tells you, 'I've only got one foot', you'll NOT be saying, 'Bodymacs', because it won't be lying, will it?

Child: If it's got two foots, it, erm,

[

Mother: two: (.) FEE:T.

Child: Yeah, it will BE lying.

02LA

[24]

Milly: ... and then they said something about Krushchev has leukemia so I thought on it's all a big put on.

Jean: Breshnev.

Milly: Breshnev has leukemia. So I didn't know what to think.
(Jefferson 1987:87)

As can be seen, the corrective speech in [23] does not have the same effect as that in [24]. This suggests that exposed corrective speech does not always lead to the recognition of a correction. It is my belief that the reason for the failure in [23] lies not with the speaker, who is communicating rationally, but with the hearer, who is a developing child. As Sperber and Wilson suggest, when a communicator is communicating rationally, and an addressee assumes she is communicating rationally, 'the success of communication depends on the addressee's ability to infer the communicator's intentions' (1995:165). As the literature of children's pragmatic abilities shows (e.g., Ochs and Schieffelin 1979; Ryder and Leinonen 2003), children's inferential abilities are limited and developing. Since the interpretation of a corrective intention derives from a synthesis of the form and content of the utterance of both interlocutors, a child's developing inferential abilities suggest he may have limited abilities to integrate such information so as to complete the stages of the inferential process (see the beginning of Section 5, above). This further suggests a child may fail to integrate information necessary for the interpretation of a corrective intention, and consequently may then fail to recognise the speech as correction and so fail to use it to correct his mistakes.

Hence, even though exposed correction makes a correction strongly manifest to a child, it is possible the child will not access it and use it to correct his mistake, because of his still developing inferential abilities. That is, the positive effect of exposed corrective speech on a child may not be the same as that on an adult, as shown in Jefferson's study.

With regard to embedded corrective speech, since a parent's intention to correct is only a weak contextual implication, I believe that even a mature adult hearer may fail to derive this assumption, as reflected in Jefferson's analysis of the two possibilities above; a

developing child would often draw this contextual implication even less often.

To summarise, I make two predictions, from a relevance-theoretic perspective, of the conversational consequence or the positive effect of exposed corrective speech, and embedded corrective speech addressed to language-acquiring children. These are:

- (a) *neither exposed corrective speech nor embedded corrective speech will bring about positive effects on all occasions;*
- (b) *exposed corrective speech is likely to bring about more positive effects than does embedded corrective speech.*

5.4. Summary

In this section, I have drawn upon Relevance Theory (Sperber and Wilson 1995) in order to propose that a child needs to undertake an inferential process in order to recognise a parent's corrective speech as correction, and then use it for the purpose of his grammar learning. Specifically, I propose that parents' corrective speech be studied in terms of how accessible the assumption is to a child that he has made a grammatical mistake. For this purpose, I apply a relevance-theoretic understanding to two concepts from the discipline of conversational analysis (Jefferson 1987): exposed correction and embedded correction. I then propose that parents' corrective speech needs to be distinguished in accordance with these two types, so that the relationship between corrective speech and a child's recovery from grammatical mistakes may be more precisely measured than it is in the current literature. In the next section, I conclude the present paper by defining the specific questions an empirical research may address for these purposes from the relevance-theoretic perspective.

6. Discussion

My review of the available studies on parental corrective speech and its relationship with children's recovery from grammatical mistakes shows that the relevant literature does not identify all potential forms of responsive speech which have a corrective function. Nor does it distinguish corrective speech into exposed and embedded corrective speech. Neither does it study the positive effects of corrective speech in terms of exposed and embedded corrective speech. So, as a result, the relevant literature cannot provide an accurate way of addressing the relationship between corrective speech and children's recovery from grammatical mistakes. In order to examine appropriately the relationship between corrective speech and children's recovery from grammatical mistakes, it is necessary to re-investigate the phenomenon of corrective speech from a pragmatic perspective, by drawing upon Relevance Theory in order to distinguish between exposed and embedded corrective speech. Specifically, research from the new perspective may address the following questions:

- (1) What are all the potential forms of parental responsive speech that fall into the broad category of correction?
- (2) What are the forms of corrective speech that fall in the category of exposed correction and what are those that fall in the category of embedded correction?
- (3) How do the positive effects of parental exposed correction and embedded correction, respectively, look like?
- (4) What is the relationship of parental exposed correction and embedded correction, respectively, with children's recovery from grammatical mistakes, and what is the relationship of these two types of corrective speech with the concept of negative evidence?

I believe findings from new research taking the relevance-theoretic perspective will bring into view useful insights into the relationship between corrective speech and a child's recovery from grammatical mistakes and therefore contribute to the debate surrounding negative evidence.

Adopting the relevance-theoretic approach in empirical research, Wang (2005) has found that (a) parental corrective speech can be distinguished into two major types, namely, exposed correction and embedded correction; (b) exposed correction is rarely available to children at an early stage of development, but is more available to children at an advanced stage of development; (c) embedded correction is substantially available to children at both an early and an advanced stage of development; (d) exposed correction often brings about positive effects on children at both an early and an advanced stage of development; and (e) embedded correction rarely brings about positive effects on children at an early stage of development, but brings about positive effects more often on children at an advanced stage of development. These findings evidently enrich the existing knowledge of the phenomenon of corrective speech in the acquisition process, and contribute to our understanding of the role corrective speech plays in children's recovery from grammatical mistakes, and thus may well have an impact on our theorising about acquisition. Nevertheless, since the sample in this empirical study is relatively small, the results concerning the availability of, and the positive effects generated by, the sub-types of corrective speech across different stages are only indicative. This consequently shows the need for larger-scale future studies, which would provide further evidence for what the present researcher has found and claimed, and would lead to a more comprehensive understanding of the phenomenon of corrective speech in the acquisition process.

Note that in this paper, I have attempted to incorporate analytical categories from Conversation Analysis into the framework of Relevance Theory, which fundamentally treats human communication as mentally representative and therefore inferential. The reason for

doing this is that, on the one hand, much research on corrections has been conducted in Conversation Analysis; yet, on the other hand, there is a need to explain how an analyst comes to the conclusion that some utterances, but not others, in conversation are subsumed under a specific category. I believe Relevance Theory provides a way for such an explanation, because the theory acknowledges the role of a speaker and a hearer in successful communication. Arguably, Relevance Theory and Conversation Analysis differ from each other in that the former takes linguistic form as its starting point, whereas the latter starts from the interplay between the composition and the position of utterances in turns at talk. I believe it is the inferential work of speaker and hearer as communicators that gives rise to the interplay of utterances in conversation. As I have shown in this paper, only when we acknowledge that an inferential process based on a pragmatic principle obtains, can the phenomenon of corrective speech in the first language acquisition process, as well as elsewhere, be appropriately explained. So the substantiation of categories from Conversation Analysis via the application of a pragmatic principle, such as Relevance Theory, is plausible and useful.

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Acknowledgement

Special thanks go to Dr Chris Christie and two anonymous reviewers. All errors remain mine.

Notes

1. In this paper, I have referred to a speaker as *she* and a hearer as *he*, following the convention of Relevance Theory (Sperber and Wilson 1995), without intending any contextual implication. Since in this paper a language-acquiring child is studied as the hearer of parental corrective speech, and the parent as the speaker, I have referred to a child as *he* and a parent as *she*, unless otherwise stated (e.g., when in a direct quotation, or when the context identifies the gender of both speaker and hearer).
2. Despite its rather early publication, the longitudinal study by Brown and his colleagues in 1970's, such as Cazden, Bellugi, and Hanlon, on three Harvard children, Eve, Adam, and Sarah, as famous as the researchers themselves, has been widely quoted in the literature of language acquisition in support of particular claims. Findings from the study have been cited by almost all the studies that I review in this paper (Section 4). Concepts such as telegraphic speech, MLU, etc., are all developed from this longitudinal study and have been taken for granted as measurements of development in most empirical studies in relevant areas (cf. Pinker 1998:206); see also Section 4.1). The concept of parental corrective speech, on the other hand, is something of which the availability among English-acquiring children is also taken for granted (cf. Pinker 1998:206) but of which the significance is still being debated.
3. See also Pinker (1989) and Section 3.1 of this paper.
4. Unless otherwise stated, data of parent-child corrective speech in this paper are quoted from Wang (2005), where language-acquiring children are assigned to two groups, in accordance with their developmental stages: '02', as in '02JA' of examples [7] and [8], refers to a more advanced stage of development (JA is the name initials of an individual child subject), whereas '01' means an earlier stage of development. For the conventions of transcription, see the Appendix at the end of this paper.

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THE PRAGMATICS OF CORRECTIONS

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Appendix

Transcription Conventions

.	The utterance is uttered with a falling contour.
,	The utterance is uttered with a low-rise contour.
?	The utterance is uttered with a high-rise contour.
!	The utterance is uttered with an exclamative tone.
(())	The content enclosed in the brackets is contextual information
(?)	The speech is unintelligible or unclear.
(.)	A longer than usual pause is heard.
::	The word or syllable that carries this sign is uttered with extra length, and the more colons, the longer the duration.
UPPER CASE	The capitalised word or syllable is uttered with extra loudness.
—	The underscore indicates that the syllable or word underlined receives an accent.
[An interruption occurs.
> <	The speech in between is uttered very quickly.
° °	The speech in between is uttered in a whisper.
//	The beginning of a new corrective exchange.