23. What do you think of the dialect in these places? (Ugly, nice, neither nor)
Scania; Småland; Blekinge; Halland; Gothenburg; Stockholm; Gotland; Värmland; Dalecarlia
24. What do you think of these ways of speaking? (Alternatives as in 23)
Standard Swedish (as spoken on TV); Finland Swedish; Immigrant Swedish
25. What do you think of the dialect in these places? (Alternatives as in 23)
Lund; Landskrona; Helsingborg; Trelleborg; Kristianstad
26. What is most fitting? (Malmöese, Standard Swedish, Equally good)
News on TV; Entertainment on TV; News on national radio; Entertainment on national radio; News on regional radio; Entertainment on regional radio; Local radio; Rock music; Play at city theatre; Politician in Malmö; Politician on TV; Teacher in Malmö.
27.
A People with high education in Malmö often speak broad Malmöese
B People with low education in Malmö often speak broad Malmöese
C Education doesn't have to do with whether you speak broad Malmöese or not
28. What is typical of broad Malmöese?
29.
A People speak different kinds of Malmöese in different parts of Malmö
B People speak the same kind of Malmöese in all parts of Malmö
30. If you think people speak differently, can you mention any differences? Write the name of the district and how they speak there.
31.
A Boys speak more Malmöese than girls
B Girls speak more Malmöese than boys
C Boys and girls speak as much Malmöese
32.
A I sometimes try to speak less Malmöese
B I never try to speak less Malmöese
33. If you try to speak less Malmöese sometimes, when do you do it?

Thank you very much for your help!
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Who's Got the Model?

Problems in Analyzing Mother-Child Communication in Dyads with Internationally Adopted Children

Boel De Geer

Abstract[1]
Three different models for the analysis of dialogues were reviewed and applied to a corpus of video-recordings with play interaction between an internationally adopted child and his mother. They boy had only been living with his new family in Sweden for 0-4 weeks when the different recordings were made. It was found that all existing models would have to be adapted if applied to this corpus. One reason for this is that at least for the child, the somatic modality, i.e. expressed by means of gaze, touch, pointing, reaching etc., is a dominating and also very well developed channel of communication. Suggestions were made for modifications of the existing models in the direction of a more suitable design.

INTRODUCTION

Starting to dig in the more or less virgin land of the language acquisition of internationally adopted children, I find myself looking for a model for analyzing my data which consists of video-taped interaction between internationally adopted children and their mothers. There are many different models for analyzing discourse and communication, some of them especially adapted for adult-child dyads, the adult part of the dyad most frequently being the mother.

It seems natural to me to at least try to use one of the already existing models. This will enable comparison with at least the sample on which the model in question is based, and it would indeed be interesting and important to compare the language acquisition of the internationally adopted children to that of Swedish children and possibly also of immigrant children.

SOME ASPECTS ON DISCOURSE ANALYSIS

Analysis of communication, and particularly analysis of dialogues and conversation, has been of interest not only to linguists but also to psychologists and ethnomethologists over the past one or two decades (e.g. Levinson 1983,

[1] This is an abbreviated version of an unpublished paper with the same heading. Anyone interested in the complete version should contact the author at the following address: Department of Linguistics and Phonetics, Child Language Research Institute, Lund University, Helgonabacken 12, 223 62 LUND.

Beattie 1983, McTear 1985, Oreström 1983, Garvey 1984, McLaughlin 1984, Sigurd 1985, Wardhaugh 1985, Söderbergh and Bredvad-Jensen 1987, Junefelt 1987, Linell and Gustavsson 1987).

A number of works have been mainly theoretical (Levinson, Beattie, Garvey, McLaughlin, Wardhaugh), whereas others have also presented a model for analyzing data (Oreström, Linell and Gustavsson), some of them, a model especially adapted for child-child or child-adult discourse (McTear, Söderbergh and Bredvad-Jensen, Junefelt). One model is actually a computer system simulating human communication (Sigurd 1985).

The concept of conversation is defined by Catherine Garvey (1984) as:

> ...informal, more or less spontaneous interchanges in which a few or just two persons alternately introduce and jointly pursue topics in a leisurely manner without an explicitly prearranged agenda. A conversation can be embedded in some other type of interaction or can constitute a whole encounter. (p. 158).

The kinds of conversation on which most adult-adult dialogue models are based seem to be of the sort where conversation constitutes the whole encounter. Therefore, it is not all that strange that the theories of e.g. Levinson, Oreström or Linell and Gustavsson are more or less purely verbal. They capture conversation in a very narrow sense, giving one the mental picture of two people sitting in armchairs with their hands neatly folded on their laps.

In recent years, however, dialogue researchers (Beattie 1983), and child language researchers (Söderbergh 1980, Söderbergh and Bredvad-Jensen 1987, McTear 1985, Junefelt 1987, Brumark forthcoming), have been anxious to emphasize the importance of taking into consideration not only verbal language but also all the non-verbal cues of communication. People, and children in particular, use a wide range of both vocal and somatic signals, which I think should be included in a complete dialogue analysis. It will therefore be necessary for anyone who is interested in analyzing dialogues to use video-taped data. This view is now shared by a number of researchers.

THE INTERNATIONALLY ADOPTED CHILDREN

Immigrant children arriving in Sweden have to face the task of learning a new language. The situation for internationally adopted children is, however, different from that of the immigrant children in that the adopted children are on their own. Whereas an immigrant child brings his first language along and continues to use it at home, the adopted child is definitely cut-off from the past[2]. To what

[2] Very few Swedish people adopting a foreign child do, in fact, speak the child's language. Some may have a very basic vocabulary, restricted to words referring to food, sleep, play etc.

degree and what the consequences of this difference will be both with respect to linguistic and other development we can not say. Most probably several factors beyond control may interfere.

What we do know, however, is that the child abruptly is placed in a new language environment, among strange people with (to him) strange habits. I will not here discuss the different medical, social or psychological problems that often arise during the first period of time in the new family, but concentrate on linguistic aspects.

My study, which will eventually comprise 2-3 children from Columbia, has only just started. The first child arrived in May 1988 at the age of one year and ten months. During the first days with his new parents he was completely silent, then he started whispering, or rather miming without any airstream. After a week he started to make faint noises combined with communicative gestures. He also babbled a lot when on his own. From the very beginning he most clearly communicated with gaze, pointing, reaching, etc. His parents do not speak his mother tounge, Spanish, except for a few words for toys, clothing, food, etc.

After two weeks in Sweden he began repeating or at least trying to repeat words of his parents' speech, both when addressed to him and when not. Within a short time, he was able to repeat chains of 3-4 words, and after a month's stay he used about 15 words spontaneously. He used a handful of (identifiable) Spanish words which were understood by his parents. He used the word *agua* for water, a very popular liquid with which he played a lot, and *tantalone* (*pantalones*) for trousers. He also mixed the two languages, as in referring to his toy duck as *anka mio*, where *anka* is the Swedish word for 'duck' and *mio* is the Spanish possessive pronoun 'my'. The word order is also Spanish.

From the recordings, it is clear that the communication between the boy and his mother is different from that between Swedish mothers and their children, and the reason is of course that the boy presumably does not understand and clearly can not speak like a Swedish two-year-old. Thus, it is the mother who does the talking. She asks questions, with a very answer-prompting intonation, and like a mother of an infant she accepts almost any behaviour as an answer. She comments and expands the boy's actions and responds to both somatic and vocal "utterances", whether or not these are overtly intended as communication. Her speech contains frequent use of back-channel items (referred to as *returord* 'return words' in Sigurd 1984), often emphasized by some behaviour in the somatic (nod, headshake) or vocal (by intonation) modalities.

In showing her interest and involvement she uses her face and voice a lot. These means are also used to get and hold the boy's attention, which is not

difficult because he too seems to be determined to communicate. He is extremely skilled in his use of somatic signals such as reaching, pointing and facial expressions.

In order to code and analyze the communication between this boy and his mother I will obviously need a model that can account for the non-verbal "utterances" as expressed by the boy's gestures and vague vocalizations as well as proper verbal utterances. And of course the somatic and vocal behaviour of the mother are just as important.

EVALUATION OF SOME EXISTING MODELS

In the following, I will present a number of models designed for the pupose of dialogue analysis. I will also try to apply them to my own recordings and comment on the outcome.

When studying internationally adopted children's longitudinal efforts to learn to communicate, the following factors will probably be of special interest:

1. Initiative. Are initiatives taken by the child or the mother? Is the distribution of initiatives stable or changing over time? How can we catch and describe this development? How are initiatives distributed within the same person but between different modalities? Is this pattern stable? Is anyone "leading" the situation?

2. Cohesion. Are both parties showing responsiveness to each other (are they answering questions, responding to proposals, etc.)?

3. Confidence. Are they being supportive (prompt at answering, giving encouraging back-channel items)? Are they looking at each other (eye-to-eye-contact)? Do they touch? Do they use vocatives?

4. Understanding. Do they understand each other, i.e. are they talking about the same things? If not, is it possible to find the reason?

IR-Analysis

(Linell and Gustavsson 1987)

By focussing on the "local dynamics" of the dialogue, i.e. the linkings between adjacent or near-adjacent turns this model is said to reflect the relations of coherence and dominance of the dialogue. Linell and Gustavsson have chosen the turn as the unit of talk to be analyzed. (A turn is defined as a period of time when the speaker is talking, cf. Catherine Garvey's (1984) definition: "Turn-taking or turn-at-speaking = a unit of the distribution among the different speakers of the right or obligation to talk in a talk engagement." (p. 30). The turns are coded as to being initiatives or responses, using a set of 18 features.

After coding the material several quantifications can be carried out in order to reveal a number of qualities of the dialogue. (For a thorough presentation of this procedure see Linell and Gustavsson 1987: 191-208).

I have applied the IR-model to my data with the following results:

(1) **Sequence 1:**

? 1. Child: kxkxkxkxkx... de (M:Mmm)...pxpxpxpxpx
> 2. Mother: Ja NU sitter katten på rätt håll. Ja de e DIN näsa... å HUNDens näsa. Har du sett att de e en liten HUND?
(Yes NOW the cat is sitting right. Yes that's YOUR nose... and the DOG's nose. Can you see it's a little DOG?)
< 3. C: VOV!
<> 4. M: Ja... VOV VOV säjer hunden. Va säjer KATTen?
(Yes, BOW WOW says the dog. What does the CAT say?)
< 5. C: Miii...
<) 6. M: MJAO, ja!
< 7. C: Mjao
< 8. M: Mjao
? 9. C: (...)

(For explanation of codes see (5) below.)

This coding proved to be quite difficult. This model only takes into consideration the verbal aspect of the dialogue. There is no reference to the somatic or vocal modes, though heavy stress is marked by capitals.

Turn 1, since being non-verbal, must be left with a ?, even though it serves as an initiative to turn 2. As a consequence of this, turn 2 can only be coded as a strong initiative, even though it contains two responses. The procedure will get even more troublesome if we continue the sequence:

(2) **Sequence 2:**

^ 1. M: Titta nu kommer HUNDen till dej. Goda goDA! Goda goDA! ... Ska den DRICKa lite?... ÅÅÅ den dricker VATTen... AGUA...Namnamnam...AGUA... namnam... VATTen tycker hunden om... Hunden e TÖRSTig... Namnam... Ummnamnamnamnamnam... ÅÅÅ... Så säjer den TACK TACK... TACK TACK... TACK TACK
(Look here comes the DOG. Hello hello! Hello hello! Is it going to have a drink? OOO it's drinking water... AGUA Yumyumyumyum... AGUA... yumyum...The dog really likes WATER... The dog is THIRSTy... Yumyum... Ummyumyumyumyum... OOO... And then it says THANK YOU... THANK YOU... THANK YOU)

How do we code this? It is pointed out by Linell and Gustavsson that their model is not suitable for dialogues with long, monologuic turns. But does the above consist of only one turn? If we had a means of transcribing and coding these sequences, including all modes of communication, we would get the following results (non-verbal behaviour in italics):

(3) **Sequence 1':**

^ 1'. C: *Puts doll on pot. Makes appropriate noises:*
kxkxkxkxkxkxkx
Puts doll away:
> de (M: Mmm)
Puts cat on pot, upside down.
^ pxpxpxpxpxpxpx
Turns cat right.
< 2'. M: Ja nu sitter katten på rätt håll.
> 3'. C: *Puts cat away and dog on pot.*
Touches dog's nose, looks at mother, then touches own nose.
<> 4'. M: Ja de e DIN näsa... *(C throws dog away)* ...å HUNDens näsa. Har du sett att de e en liten HUND?
Takes the dog and holds it towards the child.
< 5'. C: VOV. *Looks at mother.* (Continues as above.)

And the "monologue" appears to be a dialogue:

(4) **Sequence 2':**

^ 1'. M: Titta nu kommer HUNDen till dej. *Walks the dog toward the child.* Goda goDA...Goda goDA. *Pokes at child's legs with dog, both laughing.*
> 2'. C: *Stretches the pot upside down to the dog, looks at mother for confirmation, then stretches pot further.*
< 3'. M: Ska den DRICKa lite? *Makes drinking noises and makes the dog drink from the pot.* ÅÅÅ den dricker VATTen... AGUA...Namnam...AGUA...namnam...VATTen tycker hunden om. *Child looks at mother.* Hunden e TÖRSTig.
< 4'. C: *Nods*
< 5'. M: Namnam *Drinking noise*...Ummnamnamnamnamnamnam... ÅÅÅ Så säjer den TACK TACK *Pokes at child with dog*... TACK TACK
? 6'. C: (...)
< 7'. M: TACK TACK

We can now compare sequence (1) and (3) with respect to the different transcription methods. The result gives a very different picture when it comes to who is providing the most initiatives. In (1) the child is not making any initiatives. In (3), where his somatic behaviour is added to the analysis, he is found to make at least two weak initiatives. (I found it troublesome to decide when a somatic turn should be regarded as strong or weak. Maybe a borderline could be drawn between on the one hand proper gestures like reaching for objects but also the kind of behaviour found in (3), turn 3', where the boy is touching his own nose and seeking eye-to-eye-contact with the mother. Weak initiatives would be actions like (3) turn 1', where the mother has the option not to respond to the boy's "initiative".)

(5)		>	^	<>	<)	<	?	N
Sequence 1:	C:					3	2	5
	M:	1		1	1	1		4
Sequence 1':								
	C:	2	2			3	1	8
	M:			1	1	2		4

(> = strong init., ^ = weak init., <> = both strong init. and resp., <) = resp. closing the topic, < = resp. to partners adjacent turn, ? = unclear utterance, N = total number of turns)

From the above it is obvious that when we accept the non-verbal behaviour of the child as being communicative, the child is producing even more initiatives than the mother, though this did not show in (1). This serves as a strong argument in favour of including the somatic modality in the model.

The model offers several attractive techniques for dialogue analysis, but can not be regarded as a sufficient one when small children provide the data.

The Söderbergh Model

(Söderbergh 1980, Söderbergh and Bredvad-Jensen 1987)

This model accounts for both verbal and non-verbal communication, represented by three components: a verbal, a vocal and a somatic one. In a way similar to that of IR-analysis, verbal communication is coded with respect to dialogue flow and utterance function, kept apart on different levels. (For a thorough presentation see Söderbergh and Bredvad-Jensen 1987).

Dialogue flow is represented by introduction of topic, continuation of topic (implying that new aspects are introduced), tying on to partner's utterance/ nonverbal behaviour, tying on to own utterance/behaviour. Utterance function consists of a small set of main- and several subcategories. Main categories: request information, give information (on request), give information (spontaneously) and acknowledge. Subcategories: confirmation, denial, protest, assumption, doubt, surprise, proposal, agreement, disagreement, play, etc.

The vocal component is said to "mark tone of voice expressing certain attitudes on the part of the speaker that may be of crucial importance to the course and outcome of the dialogue" (Söderbergh and Bredvad-Jensen 1987: 373). Functions are e.g. doubt, surprise, emotionality and involvment.

The third component, the somatic one, concentrates on direction of body, gaze, and manual activity.

After coding, the Söderbergh and Bredvad-Jensen results are quantified according to the following procedure:

1. Count the number of words uttered by mother and child, respectively. This will reveal the *mother's role as a listener.*
2. Count all child utterances tying on to earlier utterances of the child. This will show if the child is allowed to *keep his own initiative.*
3. Count all mother utterances tying on to earlier child utterances and relate to the total number of mother utterances. This shows the degree of *"supportiveness"* of the mother, i.e. whether she responds to the child's expressions and adapts to the child's interests.
4. Count all mother utterances tying on to her own earlier utterances in order to reveal the opposite of 3.
5. Negative scores will be given to a mother showing a *negative emotional attitude.*
6. *Responsiveness to the child's vocal signals* will receive high scores.
7. *Responsiveness to the child's somatic signals* receives high scores. According to the model, the mother's somatic reaction is to be analyzed. However, I think it is possible to react both verbally and vocally to somatic behaviour.
8. The mother's attentive and cooperative behaviour is measured by her *ability to establish a joint enterprise.*

I have applied the model to my own data, to an episode similar to the ones in Söderbergh and Bredvad-Jensen:

(6) **Sequence 3:**
(To be read top-down.)

Verbal analysis		Text and vocal analysis	Somatic analysis Child	Mother
==> Att!	Ch 1	te	DirB+ DirG E Man + Deix	DirB+ DirG P Man -
<-- TP ReqInfo: Label	Mo 2a	Ja va e DE? Inv + (Yes what's that?)	Man -	
--> Info: Label	Mo 2b	dockans Öra (the doll's ear)	DirG P Man + Deix Word ill	
<-- Rep Mo 2b	Ch 2	öa (ear)	DirG E Man + Deix	
<-- Acknow ellipt Ch 2	Mo 3a	Öra ja (yes ear)	DirG P Dir G E	
(<--) Surprise, Voc	Mo 3b	OJ!		

(cont'd.) --> TP ReqInfo	Mo 3c	Var e eleFANTens öra? (Where is the elephant's ear?)	DirG E	
<-- TP? Info	Ch 3	(...)	DirG P	
<-- Acknow rep C 3	Mo 4a	NÄsa ja... NOS ja (Nose yes...nose yes)	DirG E Man + Deix	
(<--) Surprise, Voc	Mo 4b	OJ!		
--> Info:Def	Mo 4c	HÄR har du elefanten/här har du elefantens Öra (Here is the elephant/here is the elephant's ear)	DirGP	DirG E Man + Deix

(**Dialogue flow**: ==> = introduction of topic, --> = continuation of topic introducing new aspects, <--/(<--) = tying on to partner's utterance/nonverbal behaviour, "/(") = tying on to own utterance/nonverbal behaviour. **Verbal analysis**: Att! = attention getter, TP = turn passer, ReqInfo = require information, Info = giving information, Rep = repetition, Acknow = acknowledgement, Ellipt = elliptical, Voc = expresed in vocal modality. **Vocal analysis**: Inv + = expressing involvment and interest. **Somatic analysis**: DirB +/- = direction of body, DirG P = direction of gaze towards partner or partner's activity, DirG E = direction of gaze towards own activity, Man +/- = manual activity, Deix = pointing, Word ill = word illustrating.)

Despite the lack of speech, there is no doubt that the boy is communicating. Guided by the relatively well-defined situation of play he understands and responds somatically and sometimes vocally to the mother's initiatives. However, following this model, the dyad, and particularly the mother, would appear to be more dominating than she is, and this intuitively feels unfair. She talks, of course, and even though she is often quiet for long times, watching the boy and waiting for him to say or do something, she is by far dominating verbally. Nevertheless, she is very attentive and notices the boy's every movement or gaze.

A scoring like the above would characterize the mother as a bad listener, since she contributes such a large part of the speech. Also the child can not be allowed to keep his verbal initiative simply because he is not able to. However, he is free to continue his somatic behaviour. The mother would not score very well for supportiveness either, even though she is tying on to the child's utterances. Counting her utterances tying on to child utterances and relating these to her total number of utterances gives an "unfair" picture of her supportiveness. She is for instance providing the answers to her own questions on the boy's behalf, because he is unable to do it. And she tries to keep his attention to the topic of ear positions for some reason that we do not know. Maybe she wants to teach him about ears, or teach him something about the social behaviour of holding a conversation; perhaps she is just playing.

She is responsive to the boy's utterances in whatever modality, as well as being able to establish joint enterprises. I am not convinced that the ability to establish joint enterprises can be combined with a behaviour which allows the child to keep his own initiatives. Do you not have to make initiatives of your own to create a joint enterprise? Is it not rather the ability to join the enterprises initiated by the child that should give the mother extra points?

This is a model which, in its original form, might be well suited for the analysis of mother-child dyads where the child possesses a certain communicative (and possibly also linguistic) competence[3]. Without modifications, it will not capture some of the specific features of the communication of a child that lacks verbal language. Or, as pointed out by Snow 1979:

> The mother can speak the language much better, but the child nonetheless can dominate the conversation, because the mother follows the child's lead in deciding what to talk about. (p. 372)

Further, the verbal component consists of dialogue flow and utterance function. This means that somatic and vocal turns would not contribute to the development of the dialogue or carry utterance functions. But they do. This could be solved by "raising" the characteristics of utterance function and dialogue flow to a superior level or by including them in all components.

Child-Adjusted Communication

(Junefelt 1987)

This is a model which takes into consideration a somatic modality. It was used within the project Blindness and Communication to analyse dyads where one of the partners was blind. There was also a sighted dyad (both mother and child were sighted). Thus the model has been used successfully for sighted dyads as well. Also, the fact the the model as designed and used when analyzing the communication of small children in a longitudinal project (during three years starting at an age of approx. 6 months) makes it interesting and worth trying. The model recognizes three different modalities – a verbal, a vocal and a somatic one:

The verbal modality includes topic, vocabulary, sentence type, speech act type and repetitions or imitations. The vocal modality contains pitch, intensity, prominence timing and other miscellaneous characteristics such as emotional tone, extra vocal sounds (coughs, hiccups, etc) and laughing. In the somatic modality we find the characteristics head and body posture, arm and hand

[3] The model was designed for the analysis of mother-child dyads where the children were three years old.

movements and somatic imitation (of somatic behaviour) or mirroring (of partner's vocal or verbal behaviour).

The turn is the speech unit chosen for analysis. Junefelt recognizes five different types of turns. This enables one to follow the child's development from somatic and vocal turns to verbal and mixed ones. The five types are: verbal turns (verbal vocalizations, expressed simultaneously in the verbal and vocal modalities), vocal turns (non-verbal vocalizations, expressed in the vocal modality), somatic turns (expressed in the somatic modality), mixed turns (expressed in two or three modalities) and so-called messenger turns (expressed in any modality, and said to be taking the partner's perspective and being made on behalf of him). Junefelt gives the following example of a messenger turn:

> Mother: "Was it nice to have a bath?"
> Child: (Does not answer).
> Mother: "Oh, yes it was great" (messenger turn) (p. 63)

Applying the model to my data gives the results shown in (7) below (I have taken the liberty of simplifying the procedure somewhat).

In this model too, dialogue flow and utterance function is restricted to the verbal modality (here labelled topic, speech act type and repetition, imitation or mirroring). It should be possible to adjust these details in a way similar to that proposed above.

The Junefelt model was designed for both quantitative and qualitative analyses of selected sequences. Quantitative analysis involves the counting of turns, utterances, words, vocal and somatic expressions, verbal, vocal and somatic characteristics and of affective, communicative, and pedagogic functions as well as synchronic and diachronic effects. (For a complete definition of these functions and effects see Junefelt 1987.) Qualitative analysis in plain language was also made for each sequence.

The model is very time-consuming. It would not be feasible to analyze a complete corpus using this model; rather one would have to select short sequences. Such a selection is always difficult to do and involves a certain degree of arbitrariness. However, this is obviously the price you have to pay for a model that accepts a child as a communicating and intentional human being, even though at least from the start he is speechless.

This model was designed to capture development over time of various linguistic and communicative skills. The project started during the first half of the babies' first years of life and was continued for a period of time of three years. Thus, in the later part of the study the age of the children coincides with

(7) **Sequence 4:**

(To be read from left to right, starting at turn 1)

M	**Turn 2**	**Turn 3**	**Turn 6**
Ve	Ja va e DE?	De e en FISK	FISK ja
	(Yes what is that?)	(It's a fish)	(Yes fish)
I	3	3	3
II	4	4, 1	1
III	2	1	1
IV	1	3	3
V	2c		2
Vo			
I			
II			
III	X	X	X
IV			
V			
So			
I	2b----------		
II			
III			
IV			

Ch			
So			
I			
II			
III	1b----------		
IV			

	Turn 1	**Turn 3**	
Vo	å:däna	åga	
I			
II			
III	X	X	
IV			
V			
Ve			**Turn 5**
I	2, 3		pik
II	?		6?
III	2?	1?	1
IV	1?		3
V			2

C (Context) Sitting on floor looking at a doll's bathtub fish.

(Verbal analysis: I: topic (introduced by 1. mother or 2. child and related to 3. child or child's activities or 4. closest surroundings), II: vocabulary (1. nouns, 2a. names and 2b. kinship terms, 3. pronouns, 4. verbs, 5. words expressing values and 6."baby talk" words), III: sentence type (1. interrogative, 2. declarative, 3. imperative or 4. exclamatory), IV: speech act type (request for 1. information or 2. action, 3. description) and V: 1. repetitions, 2. imitations or 3. mirrorings. **Vocal analysis**: I: pitch (H= high, L= low, rising or falling), II: intensity (W= whispering, Ex= exclamation), III: prominence (X), IV: timing (tempo Tf= fast, Ts= slow, R= rhythm and P= pauses) and other V: miscellaneous characteristics (E= emotional tone, laughing, EVS= extra-vocal sounds PI= primitive interjections, im= vocal imitation or mir= mirroring). **Somatic analysis**: I: head (1. facial expression, 2a. eye-to-eye-contact, 2b. facing partner, 3. smiling, 4a. nods and 4b. headshakes), II: body (1. holding, 2. embracing, 3. kissing or otherwise 4. touching the partner), III: arms/hands (1a. reaching and 1b. pointing, 2. illustrating by manual gests) and IV: somatic 1. imitation or 2. mirroring (of partner's vocal or verbal behaviour).

the age of the adopted children of my study. This makes this model (with appropriate adaptations) a possible alternative, and this will also allow cross-project comparisons.

CONCLUSION

The communication in a dialogue between internationally adopted children and their mothers is governed by the fact that the child has just recently changed environments and languages in a very definite way. Despite this, from the very start of their new life together, this mother and child are communicating efficiently.

Three models have been applied in the course of attempting to identify a suitable model for analyzing the author's data. All models provided good and useful techniques for the purpose, but none of them could be used without modifications.

From this investigation, it is clear that it is partly the pupose of the analysis, partly the special characteristics of the data (participants, situation etc.) that will influence the final shape of any model. A model which is tailor-made to fit a certain corpus will probably not fit another. Many dialogue researchers would benefit, I think, from a kind of "master model", leaving many options, so that it could be adapted to a given researcher's needs and still be able to compare data from different investigations.

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Preliminaries to a Referent Grammatical Analysis of Modern Irish Relative Clauses

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Abstract
Following is a report on work in progress on the development of a computer analysis of Modern Irish for use in machine translation and generation. The program uses Referent Grammar (RG) and gives special attention to the analysis of relative clauses. The program is still in a very early stage of development, so discussion is limited to a survey of the technical problems involved in the construction of a referent grammatical analysis for Irish. Some of these problems include inherent structural ambiguities, proper morphological treatment of inflected prepositions, and eventual parsing of complex relatives. The possibility of generating syntactic parse trees along with the usual functional representation output of RG is also considered as a desirable expansion.

BACKGROUND

Referent Grammar (RG) is a GPSG-based formalism designed for use in computer analysis of language. RG has been used successfully in systems for generation and translation of a variety of languages – Swedish, English, French, Georgian, Polish, and Samoan – in conjunction with work done by SWETRA (Swedish Computer Translation Group) at the University of Lund, Sweden. The preliminary analysis of Irish presented here is modelled on these existing modules and is intended to be expanded for use with them. Since Irish is a VSO language of the Celtic family, its analysis forms an important typological expansion of SWETRA's capacities. Irish also presents some interesting technical problems for the formalism of RG to describe. These will be discussed after a short introduction to the basics of RG.

REFERENT GRAMMAR

The fundamentals of RG are explained fully in Sigurd 1987 and 1988, and the Irish analysis presented here relies heavily on the analysis of Polish relative clauses given in Gawrońska-Werngren 1988. The reader is referred to these articles for detailed explanations. I will, however, briefly review the features which characterize RG and which are essential to an understanding of this paper.

First, an analysis written in RG is written directly in the Prolog programming language using Definite Clause Grammar (DCG) formalism. Thus, the syntactic rules of RG look like the kind of syntactic rules one usually encounters in