Frequency, Form, and Distribution of Illocutionary Speech Acts in Swedish Parent-Child Interaction

David Pagmar
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Abstract

In this study, young children’s development of speech acts was examined. Interaction between six Swedish-speaking parents and their children was observed. The frequency, form and distribution of speech acts in the output from the parents were compared with the frequency, form and distribution of the children’s speech acts. The frequency was measured by occurrences per analysed session. The aim of the analysis was to examine if the parent’s behaviour could be treated as a baseline for the child’s development. Both the parents’ and the children’s illocutionary speech acts were classified. Each parent-child dyad was observed at four different occasions, when the children were 1;0, 1;6, 2;0, and 2;6 years of age. Similar studies have previously shown that parents keep a consistent frequency of speech acts within a given time span of interaction, though the distribution of different types of speech acts may shift, depending on contextual factors. The form, in terms of Mean Length of Speech Act in Words (MLSAw), were correlated with the longitudinal result of the children’s MLSAw. The distribution of the parents’ speech acts showed extensive individual differences. The result showed that the children’s MLSAw move significantly closer the MLSAw of their parents. Since the parent’s MLSAw showed a wide distribution, these results indicate that the parent’s speech acts can be treated as a baseline for certain aspects of the children’s development, though further studies are needed.

Keywords
Illocutionary speech acts, parent-child interaction, first language acquisition, pragmatic development
Frekvens, form och fördelning av illokutionära talhandlingar i svensk förälder-barn-interaktion

David Pagmar

Sammanfattning

I denna studie undersöks barns utveckling av talhandlingar. Interaktion mellan sex svenskspråkiga föräldrar och deras barn observerades. Föräldrarnas frekvens, form och fördelning av talhandlingar jämfördes med barnets frekvens, form och fördelning av talhandlingar. Frekvensen beräknades på antalet talhandlingar per analysad interaktionsinspelning. Syftet med analysen var att undersöka om förälderns beteende kan betraktas som ett standardvärde för barnets utveckling. Både föräldrar och barnens illokutionära talhandlingar klassificerades. Varje förälder-barn par observerades vid fyra olika tillfällen, när barnen var 1;0, 1;6, 2;0 och 2;6 år gamla. Liknande studier har tidigare visat att föräldrar håller en jämn frekvens av talhandlingar inom en given tidsperiod av interaktion, även om fördelnningen av olika typer av talhandlingar kan skifta beroende på kontextuella faktorer.

Talhandlingarnas form, i termen av medellängd per talhandling i ord (MLSAw), korrelerade med barnens MLSAw. Fördelningen av föräldrarnas illokutionära talhandlingar visar stor spridning, utan övergripande konsekventa mönster. Resultatet visade att barnens MLSAw rör sig närmare deras föräldrars MLSAw. Föräldrarnas MLSAw uppträdde med en bred spridning, vilket indikerar att föräldrarnas talhandlingar kan behandlas som ett standardvärde för vissa aspekter av barnens utveckling, även om ytterligare studier krävs.

Nyckelord

Illokutionära talhandlingar, förälder-barn-interaktion, språkutveckling, pragmatisk utveckling
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1 Introduction

A general assumption about language development is that there is a behavioural norm, most likely culturally bound, that the progress of development will move towards. Recent studies have shown that frequency effects are pervasive in the acquisition of single words, inflectional morphology, simple syntactic constructions, and more advanced constructions (Ambridge, Kidd, Rowland & Theakston 2015). General distributional patterns of properties in a language (e.g. phonemes, grammatical and syntactical elements, etc.), that appear with a sufficient frequency can on the basis of the research mentioned above, be treated as a baseline for a child’s development. By accepting this premise, one is able to follow the development of the child, by matching the child’s linguistic output with the linguistic output directed at the child.

Throughout the thesis, the term “movement”, as in a variables movement towards x, is used. To avoid misinterpretations, it should be stressed that the notion of “moving towards x”, is to be understood as “getting closer to x”. There are no assumptions made about dependency or adaptation in this study.

The early stage of a child’s language acquisition is multi-faceted: the vocabulary is growing; syntactical and semantic properties are established. One phenomenon that a language user needs to comprehend is the relationship between the function and the form of linguistic expressions. The procedure of gaining this comprehension can be called pragmatic development. In this study, this development is examined in terms of speech acts. Speech act theory is based on the notion that a language user is performing actions when he or she speaks, and an utterance can be classified by three different properties: (i) locution, the linguistic expressions and the order in which they are presented, (ii) illocution, the meaning or intent of the utterance, and (iii) perlocution, the effect or consequence of the utterance (Austin 1961). The reason for using speech act theory when examining a child’s pragmatic development is the separation between locutionary and illocutionary acts. The distinction provides an analysis of the relationship between form and function.

Six Swedish children’s development of speech acts is examined and correlated with the frequency, form, and distribution of the speech acts produced by the children’s parents, during parent-child interaction. The term frequency is used throughout this thesis, and is to be understood as occurrences per analysed session.
2 Background

2.1 Speech Act Theory and Illocutionary Acts

Speech act theory is based on the notion that a language user is performing actions when he or she speaks. The theory was first articulated by John Austin (1961) and then further developed by the philosopher John Searle (1969). Austin claimed that an utterance can be classified by three different properties: (i) locution, the linguistic expressions and the order in which they are presented, (ii) illocution, the meaning or intent of the utterance, and (iii) perlocution, the effect or consequence of the utterance. In the following example, imagine that a toddler is about to put his or her hand on a hot stove, and someone utters (1):

(1) Don’t do that!

The locution of (1) is the words, a negation and a reference to an unspecified act, the illocution of (1) is arguably a warning, and the perlocution of (1) would be to avoid something, most likely pain. Searle comes to the conclusion that seemingly all different functions of language can be classified through a finite set of illocutionary acts (1969). Searle defines this finite set, together with Vanderveken, as consisting of five different types of illocutionary acts⁴ (Searle 1976; Searle & Vanderveken 1985):

- **Assertives** = descriptive propositions, state of the world-propositions
- **Directives** = questions and directions
- **Commissives** = propositions that tie the speaker to future events
- **Expressives** = a speaker’s attitude towards propositions and/or situations
- **declarations** = world altering propositions (e.g. verdicts, baptism)

One of Searle’s goals is to deduce the set of illocutionary acts from a scheme of felicity conditions, which would prompt the theory with a certain logical vindication. The felicity conditions are specifications for appropriate usage, and point out contextual conditions that must be met for an utterance to be a specific illocutionary act. Critics have claimed that this goal is not achieved (Levinson 1983:240), and as a consequence, the definitiveness and exhaustiveness of this set has been questioned (Hancher 1979; Lyons 1977). However, Searle’s taxonomy of illocutionary speech acts is one of the most influential concepts in the field of pragmatics.

2.2 Form, Function, and Context

When a language user wants to influence someone to make a specific action, he or she can go about it in several different ways. Consider the following utterances:

(2) It is really hot in here
(3) Isn’t it hard to breath in here?
(4) I love to feel the breeze from an open window

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⁴ In this study, there is no distinction made between an illocutionary act and an illocutionary speech act. One benefit of using the first term is that it covers non-vocal acts more intuitively.
Without a specific conversational context, an illocutionary speech act analysis is solely dependent on the locution of the utterances. (2) would be classified as an assertive (a state of the world-proposition), (3) as a directive (an information request), and (4) as an expressive (attitude towards a proposition). If, however, one were to say one of (2), (3), or (4) to a person sitting by a closed window, all three of them would arguably be considered as directives (action requests).

2.2.1 Classifying Children’s Speech Acts

In 1975, a year before Searle explicitly formulated the set of illocutionary speech acts, researcher John Dore purposed a set of nine primitive speech acts. The primitive speech acts were meant to provide a tool for classifying young children’s one-word utterances (Dore 1975). These categories described some general behaviour, such as repeating, practising and protesting. Dore made a distinction between two different types of requesting: requesting action and requesting answer. This distinction is still made in speech act studies today, when specifying directives from Searle’s set of illocutionary speech acts (Rychenbush & Marcos 2004).

Even though several studies have been made on young children’s communicative intent, differences in theoretical assumptions, method, and classification systems make it hard to present a clear overview of the field². One example is the distinction between what is considered as interpersonal and informative communication. Some describe early communicative gestures as non-informational, and classify them as proto-declaratives and proto-imperatives (Bates, Camaioni & Volterra 1975). On the other hand, studies have shown that adults interpret some of the behaviour an infant is able to produce as explicitly communicative and informative (Snow 1977). Speech acts such as different types of requests and expressives have also been determined as some of the earliest communicative acts that children produce (Astington 1988).

In this study, the classification system stems from a French study made by Rychenbush and Marcos (2004:3), and is based on Searle’s definitions of illocutionary acts. The reason for using speech act theory is two folded: one, the separation between the locution and the illocution provides an analysis of the relationship between form and function, and two, when comparing two different groups (parents and their children) the comparison is aided by using a classification system that is applicable to both groups. This way, correlations between the output from the parents and their children can be made more efficiently.

2.3 Multimodal Analysis

The classification of an illocutionary act will always take the locution into consideration. The locutionary act refers to an occurrence of a linguistic expression, but is extended to gestures and non-linguistic vocalization as well (Rychenbush & Marcos 2004:8). Taking behavioural factors into consideration are also a central part of classifying illocutionary speech acts. When a child produces a speech act, the behavioural reactions of the interlocutor, and the child’s reaction to the interlocutor’s behaviour, all play a part in the understanding of the communicative intent (Colletta & Guidetti 2012:11). This analysis is not possible without the multimodal perspective, taking not only gestures, but also facial expressions, gaze, posture, and non-lexical vocalisations, into consideration.

The illocutions of young children’s speech acts are assumed to be closely tied to the locutions of the speech acts. The development of form during a child’s second year, will not be

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² For a discussion on these differences, see Snow et. al. 1996:57.
constituted by the child expressing the same function through different sentence types, but rather a shift from non-lexical vocalisations and gesture, to more complex constructions, such as one-word-utterances and gestures, and two-(or more)-word-utterances and gestures (Dore, Frankling, Miller & Ramer 1976; Snow et al. 1996).

2.4 Studies on Pragmatic Development

Speech act theory has been the theoretical basis for several studies on pragmatic development. In a French study, researchers have examined the frequency of illocutionary acts produced by parents and their children from age 1;3 to 2;7 (Ryckebusch & Marcos 2004). Two different types of interaction between parents and their children were observed, a task oriented interaction and free play. The sessions lasted for ten minutes. They found a significant rise in the mean number of speech acts produced by the children during the sessions, while the parents’ mean number did not show any significant changes. However, distributions differed between different types of interaction. At 1;3, the mean number of speech acts produced by the children was 36.8 per session. At 2;7, the mean number of speech acts produced by the children was 98.45 per session. The study included gestural behaviour as a sufficient establisher of illocutionary acts.

Other studies have shown the development of specific illocutionary acts. A case study on a Czech child followed the development of directives from the age of 2;8 to 4;1 (Chejnová 2015). The result shows a gradual acquisition of communicative strategies when using directives.

Studies have focused the development after the age of 2;6 (Bucciarelli, Colle, Bara 2003; Chejnová 2015). However, there are results that track major development concerning speech acts during the second year of a child’s life, starting at 1;3 (Ryckebusch & Marcos 2004). There were no studies found, that focus on these aspects of pragmatic development, that start as early as 1;0 and there are no previous studies made on the development of Swedish speech act distribution with parent-child correlations.

2.4.1 French Parents’ Speech Act Distribution

In Ryckebusch and Marcos’ (2004) study, 30 French parents’ speech act distribution was examined. Parents and their children between 1;3 and 2;3 were recorded during free play, among other situational contexts. The observed distribution showed a hierarchal order of illocutionary acts during free play (assertive 50%, directive (information request) 20%, expressive 15%, directive (action request) 12%, directive (attention request) 3%). Commissives were not included in the study, since young children are not expected to produce any, nor do parents use them in interaction with their children to any greater extent below the age of 2;6 (Marcos 1998).

The same study showed that contextual factors change the distribution of illocutionary speech acts. The distributions differed between free play and task related interaction. During task related interaction the parents’ assertives dropped and the directives (action requests) increased.

In the present study, all parents and children interact in free play. The subcategories of directives in the study by Ryckebusch and Marcos are part of Dore’s primitive speech acts. These subcategories are used in this study as well, but unlike the study by Ryckebusch and Marcos, there is no distinction made between an attention request and an action request3.

3 More on illocutionary speech act classification in section 4.4.
2.5 Mean Length of Utterances in Words

The mean length of utterances in words (MLUw) is obtained by dividing the number of words by the number of utterances that a speaker produces. The use of the mean length of utterances as a measurement of children’s language development began in the nineteen twenties (Nice 1925). In the early seventies, Roger Brown (1973) introduced a refinement of the method by counting morphemes instead of words. A comparative study from 2005 showed that the mean length of utterances in morphemes and the mean length of utterances in words are almost perfectly correlated (Parker & Brorson 2005). The result suggests that the two measurements are equally effective. However, using MLUw is arguably less time consuming.

2.5.1 Utterances

Mikhail Bakhtin’s (1986) definition of an utterance rely on four accepted properties: boundaries (clear pauses between utterances), dialogicity (the fact that an utterance will either rely on a previous utterances or be the basis for a new utterance), finalization (clear endings and an exhaustive transfer of the speaker’s communicative intent) and generic form (specific conventionalised constructions for different conversational contexts). These properties seem to single out the general idea of the concept. However, there are examples of utterances that do not entail these properties. Boundaries are not always noticeable in natural discourse. Dialogicity is not necessarily the case; one counter example is Searle’s declarations. Generic form is closely tied to Bakhtin’s concept of speech genres.

In almost every case, an utterance and a speech act are equivalent. However, it is possible that an utterance could entail more than one speech act. Since this study is concerned with the development of speech acts, it is the mean length of speech acts in words (MLSAw) that is measured.

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* More on MLSAw in section 4.5.
3 Purpose, Research Questions, and Hypotheses

3.1 Purpose

The purpose of this study is to provide insight into the frequency, form and distribution of the illocutionary speech act produced by Swedish speaking children from 1;0 to 2;6 years of age, and to investigate if there are correlations with the frequency, form and distribution of their parent’s speech acts. The frequency is measured by occurrences per analysed session. This will provide indications whether certain aspects of the parent’s behaviour can provide a baseline for their children’s development.

3.2 Research Questions and Hypotheses

The following four research questions are formulated:

1. Are parents’ frequency, form and distribution of illocutionary speech acts production correlated with the age of their child?

2. In what ways do children’s production of speech acts change between 1;0 and 2;6 years of age?

3. Is the same hierarchical order of illocutionary acts found by Ryckebusch and Marcos (2004), found in the Swedish parent’s distribution of illocutionary acts?

4. Do children show a development towards their parents’ frequency, form and distribution of illocutionary speech acts?

In accordance with previous studies\(^5\), the following four hypotheses are declared:

1. The frequency, form and distribution of the parent’s illocutionary speech acts are not expected to be dependent on the age of their child.

2. The frequency of the children’s speech acts is expected to rise with age.

3. The mean of the parents’ distribution of illocutionary acts is expected to appear in a decreasing scale according to the following order: assertive, directive (information request), expressive, directive (action request), commissive.

4. The children are expected to show a development movement towards their parents’ frequency, form and distribution of illocutionary speech acts.

\(^5\) Ryckebusch & Marcos 2004; Ambridge, Kidd, Rowland & Theakston 2015
4 Method

4.1 Test Subjects

Interaction between six children and their parents (alternately mothers and fathers), was recorded, one dyad at a time\(^6\). The dyads were recorded four times. The sessions took place when the children were 1;0, 1;6, 2;0, and 2;6 years of age. All parents spoke Swedish with their child, except one, who spoke both Swedish and another language during their sessions. The participants were of middleclass background, based on annual income. To secure the anonymity of the test subjects, each child was ascribed a code for referential purposes. The code consisted of four graphemes, two letters and two digits (6M0Z, 7M0Z, 8M0Z, 5M1Z, 5M2Z, and 7M2Z).

4.2 The Recording Sessions

The sessions took place at Stockholm baby centre, in a laboratory for recording interaction. Each session lasted for approximately 15 minutes. The test subjects where asked to engage in free play, with a few selected toys (three stuffed animals, plastic cutlery, a car, three cows) at their disposal. The parents were instructed to play with their child in the manner that they were used to. The sessions were filmed with three stationary cameras and one in-action camera, worn by the parent. Both the parent and the child wore clip-on microphones, for high-end audio recordings.

4.3 The Productive Vocabulary

After each recording session, the parents were asked to fill out an online survey called Swedish Early Communicative Development Inventories, or SECDI for short (Berglund & Eriksson 2000). From 1;6, the parents specified their children’s productive vocabulary, using a list of Swedish words. Each individual result was calculated and correlated with the age of the child.

4.4 The Annotation of The Data

Each session was annotated with the software ELAN (Sloetjes & Wittenburg 2008). The analysis was made on the first five minutes of uninterrupted free interaction in each session. Both the parents’ and the children’s illocutionary speech acts were annotated, classified, and counted. The mean of both the parents’ and the childrens’s speech act frequency, and the mean of the parents’ distribution of specific illocutionary speech acts, was calculated.

4.5 Speech Act Classification

The speech acts classification was made based on the definitions in Table 1, partly grounded in previously established definitions (Ryckebusch & Marcos 2004:10).

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\(^6\) The recordings are part of the MINT-project: Modelling infant language acquisition from parent-child interaction", funded by The Marcus and Amalia Wallenberg Foundation, 2011.007
Table 1. Speech act definitions and examples from the data.

<table>
<thead>
<tr>
<th>SPEECH ACT</th>
<th>DEFINITION</th>
<th>EXAMPLES (translated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSERTIVE</td>
<td>acts that declare states of the world, definitions, descriptions</td>
<td>“this is a cow”, “the cow says moo”, “cow” (parent or child makes deictic gesture towards an object).</td>
</tr>
<tr>
<td>EXPRESSIVE</td>
<td>acts that express attitude towards the content of a proposition or a situation</td>
<td>“that’s awful”, “ooo” (make a frown while pointing to an object), “wow”, “mm”.</td>
</tr>
<tr>
<td>DIRECTIVE</td>
<td>questions, directions, acts that prompt or advice someone to do something</td>
<td>“can you take THIS lid then?” (the parent offers the toddler a plastic lid).</td>
</tr>
<tr>
<td></td>
<td>Two subcategories:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>action request</td>
<td></td>
</tr>
<tr>
<td></td>
<td>information request</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMMISSIVE</td>
<td>acts that commit the speaker to future events</td>
<td>“I will read it when you are in bed”, “we can go there tomorrow”, “later”</td>
</tr>
<tr>
<td>DECLARATION</td>
<td>acts that change the world, that have a performative effect</td>
<td>There were no DECLARATIONS found in the data. General examples: handing out a verdict, performing a baptism.</td>
</tr>
</tbody>
</table>

4.5.1 Interpretations and Inter-Rater Agreement

The majority of the classifications were unproblematic. Conventional use, conventional prosodic features, and contextual properties, all provided arguments for the analysis. However, there were speech acts of an ambiguous nature, and sometimes the classification could go in two different directions, or perhaps even be realized as two different speech acts simultaneously.

(5) såg du att det fanns en till här
saw 2sg INF. it existed one to here
“did you see that there was another one here?”

7 The utterance has a locution that conventionally would be thought of as an information request, and it could be interpreted as a question of whether the child can take the lid or not. The context shows that it is rather an action request, since the parents is trying to hand the lid to the toddler.

8 The toddler makes an assertive, pointing out what she is looking at. The parent is then trying to understand which object the child means, and asks her if it is a specific object. Hence, an information request.

9 The interpretation of illocutions can be helped by certain contextual properties, such as the behavioural reactions of an interlocutor, and the reaction to that interlocutor’s behaviour. More on these classifications in section 2.3.
(5) shows a locution that makes it easy to classify (5) as a directive (information request). When uttered, the mother strongly emphasizes the last three words, and points to an object that the toddler has not seen before. Arguably, the mother is primarily pointing out an object, and making the toddler aware of its existence, not asking if the toddler already knew of its existence. Therefore, (5) is classified as an assertive.

Two random samples were gathered from the classified data, consisting of one minute each. These samples were stripped from their classifications, and then classified anew by two fellow master students, test-rater A and test-rater B. Test-rater A classified speech acts produced by a parent. Test-rater B classified speech acts produced by a child. The results of test-rater A and test-rater B’s analysis was compared and evaluated with the original annotations, to see if there was a consistent inter-rater agreement.

4.6 MLSAw

Utterances and speech acts are, in most cases, equivalent. However, it is possible that an utterance could entail more than one speech act. Therefore, the mean length of speech acts in words (MLSAw) is calculated, instead of the mean length of utterances. This distinction is a terminological one, since it is classified speech acts that are the topic of this study.

One minute of each session was examined further, and the words of every speech act that occurred during those minutes were counted. Every non-lexical vocalization was counted as one word. Gestural speech acts with no vocalization resulted in a 0-result.
5 Result

5.1 Frequency

A histogram and a scatter plot of the parents’ speech act frequency per analysed session are presented in figure 1. The mean of illocutionary speech acts produced by the parents was 98.75 per session. Each parent showed individual differences from one session to another. All parents had at least one session, where the result of their speech act frequency was within three speech acts of the mean for all sessions. The histogram is moderately skewed with a minimal tail towards the high end. However, a Shapiro-Wilk test of normality show a normal distribution, W = 0.942, p = 0.184. A regression analysis show that there are no correlations between the parents’ speech act frequency and the age of their children, r = 0.183, t(23) = .872, p = 0.393.

There is a significant correlation between the frequency of the children’s speech acts per session and all four ages (figure 2), r = 0.656, t(23) = 4.08, p < .001. There is a wide distribution between the children’s frequencies at every age and some sessions show a lower value than a previous one. Still, there is a consistent rising movement for the group as a whole. At 1;0, the mean number of speech acts produced by the children was 21 per session. At 2;6, the mean number of speech acts produced by the children was 49.33 per session.

Figure 1. A histogram (LS) and a scatter plot (RS) of the frequency of parents’ speech acts per session.

Figure 2. The distribution of the children’s frequency of speech acts (SA), that shows the significant rise of speech acts that correlate with the age of the child (MONTH_OF_AGE), r = 0.656, t(23) = 4.08, p < .001.
For five of the children the progress between 1;6 and 2;0 entailed the greatest leap in frequency on an individual level (figure 3).

![Graph showing children's speech act frequency in actual numbers from age 1;0 to 2;6.](image)

Figure 3. The children’s speech act frequency in actual numbers from age 1;0 to 2;6.

### 5.2 Form

The form of the parent’s speech acts, in term of MLSAw, shows a significant change between the different ages. However, the distribution between parents is wider at 2;6 than at the other three ages (figure 4).

![Graph showing significant correlation between parents’ MLSAw for all four different ages.](image)

Figure 4. The significant correlation between parents’ MLSAw for all four different ages.

There is a significant correlation between the children’s MLSAw and the four different ages (figure 5), $r = 0.697$, $t(23) = 4.555$, $p < .001$.

![Graph showing significant correlation between MLSAw and the age of the children (MONTH_OF_AGE).](image)

Figure 5. The significant correlation between MLSAw and the age of the children (MONTH_OF_AGE), $r = 0.697$, $t(23) = 4.555$, $p < .001$. 

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The form of the children’s speech acts, in term of MLSAw, goes from one word per SA at 1;0, to a wide distribution at 2;6 (figure 6). However, all children, except one, show a higher MLSAw at 2;6 than at 1;0.

![Figure 6](image)

Figure 6. The progress of the children’s MLSAw from age 1;0 to 2;6. The y-axis displays MLSAw and the x-axis displays the age of the child.

A significant correlation is found when comparing the children’s MLSAw with the parent’s results, \( r = 0.587, t(23) = 3.397, p < .005 \) (figure 7).

![Figure 7](image)

Figure 7. The children’s significant movement towards the MLSAw of the parents, \( r = 0.587, t(23) = 3.397, p < .005 \). Each dot represents one MLSAw result of one child during one session.

Each child’s individual MLSAw is divided with his or her parent’s individual result for each session. The children’s percentage show a significant rise, not only in MLSAw in general, but also towards the MLSAw of their parents (figure 8).

![Figure 8](image)

Figure 8. The children’s movement towards the MLSAw of the parents.
5.3 Distribution

Some consistent patterns are observed in the distribution of specific illocutionary speech acts (figure 9). The most vital change is the rise of the children’s use of assertives. Assertives and directives (information request) also show a high presence in the parents’ illocutionary speech act distribution, closely followed by expressives.

Figure 9. The Distributions of different types of illocutionary speech acts in actual numbers. The parents’ illocutionary speech acts are displayed in the row above, and the children’s illocutionary speech acts are displayed in the row below.

The total amount of each type of illocutionary act was dived by the total number of all speech acts. The mean of the distribution for all six parents are as follows: assertive 40%, directive (information request) 31%, directive (action request) 8%, expressive 20.5%, commissive 0.5% (figure 10).

Figure 10. The mean of the parents' distribution of illocutionary speech acts, presented in percentage.
5.4 Inter-Rater Agreement

A Kappa analysis showed statistical significant agreement with both of the test raters. Rater A showed a high Kappa value when compared with the original annotations, $K = 0.917$, $p < 0.01$. Rater B did also show a satisfactory result when compared with the original annotations, $K = 0.714$, $p < 0.05$.

5.5 SECDI

The children’s vocabulary size goes from a distributional span of 20-52 words at age 1;6 to 350-647 words at 2;6 (figure 11).

Figure 11. The progress of each child’s vocabulary size from age 1;6 to 2;6.
6 Discussion

6.1 Method Discussion

6.1.1 The Dynamic Nature of Free Play

This study is based on data consisting of video and audio recordings of “free play”. “Free play” is a common interaction category in development studies. The only instruction that the parents receive is that they should play with their child, as they do at home. All recording sessions have many things in common (the room, the cameras, the toys), but there are also a lot of differences between the sessions. While one dyad is playing with a doll, another dyad is singing a song, and a third dyad is doing a puzzle. Since previous studies have shown that different tasks will encourage different distributions of speech acts, the type of play that is manifested will affect the results of the study. This is not necessarily a problem. The outliers in the processed data were examined more closely, to see if the other measurements could explain them.

6.1.2 Using the Mean of Parents’ Frequency

The frequency of the total amount of illocutionary speech act per session differed both between parents, and between sessions with the same parent. The mean of all parents’ speech acts per session was compared with the children’s frequency per session. The reason for using the mean was that the sessions were of a very dynamic nature, and because different types of play will encourage different distributions and frequencies of illocutionary acts. As long as the data showed a normal distribution, with no extreme outliers, the mean was arguably a more reliable baseline than the number for each individual session. Furthermore, as children in their daily life receive input from more than one parent, using the mean of all parents would arguably give a more reliable result.

6.1.3 Classifying Children and Adults

The inter-rater agreement test showed high agreement between the testraters’ classifications and classified data of the study. The result for both rater A and rater B showed statistically significant agreement, but rater B had a lesser Kappa value and a lower level of significance. Rater A classified speech acts produced by a parent, while rater B classified speech acts produced by a child. This might indicate that the classification is more difficult when it comes to children.

The classification by rater B was interrupted by a clarification and short discussion of the speech act definitions. There is a possibility that this might have altered the classification.

6.1.4 Is Everything Expressive?

Attitude towards propositions and situations are not only expressed in explicit expressive acts. Facial expressions, prosodic features, gestures can establish expressiveness even though the illocutionary act first and foremost is something else, e.g. an assertive or a directive. The classified expressive acts are those acts that do not establish any new information other than the interlocutor’s attitude.

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10 Accounted for in section 6.2.3-6.2.14.
6.2 Result Discussion

The analysis of illocutionary acts provides a picture of general conversational patterns. Four hypotheses were formulated:

1. The frequency, form and distribution of the parent’s illocutionary speech acts are not expected to be dependent on the age of their child.

2. The frequency of the children’s speech acts is expected to rise with age.

3. The distribution of the parents’ illocutionary acts is expected to appear in a decreasing scale according to the following order: assertive, directive (information request), expressive, directive (action request), commissive.

4. The children are expected to show a movement towards their parents’ frequency, form and distribution of illocutionary speech acts.

The frequency of the parents’ illocutionary speech acts is accepted as stable over time, taking the dynamic nature of the recorded interaction into consideration. All parents have at least one session result close to the mean of all parents, and a test of normality shows a normal distribution of frequency per session. The form, in terms of MLSAw, shows a significant rise when correlated with the age of the children. One out of five illocutionary acts, directive (action request), showed a decreasing tendency, as the children grew older. All directive (information requests) show a lower score at 2;6 than at 2;0.

A general size order between the other illocutionary acts can be assessed from looking at the distributions, but no other overarching patterns were visible.

The frequency of the children’s speech acts rises significantly with age.

The same hierarchical order of illocutionary acts, as was found in the French study by Ryckebusch and Marcos (2004), is found in the Swedish parents’ distribution. Though the distribution of percentage between the different illocutionary acts differed from the previous study they follow the same order in size, with assertives on top, followed by information requests, expressives, action requests, and commissives.

The mean of the children’s illocutionary acts move upwards from one age to the next, though their mean at 2;6 is not close to the mean of the parents, it is closer than at 1;0. The children do not exceed the parents’ frequency at any stage of the study. This result is accepted as sufficient to claim that the children are moving towards, as in getting closer, to the parents. The form of the children’s illocutionary acts, in terms of MLSAw, becomes more complex. The gap between the parent’s and the children gets significantly smaller over time, even though the parents show a wider distribution of MLSAw at the last session of the study. The changing gap is accepted as an indication of a movement towards the MLSAw of the parent. The claim is that the children are getting closer to their parents behaviour, and there are no suggestions that this is a question of adaption. The parents and the children share the same most frequent illocutionary act, assertives. No other pattern between the distributions was observed.

The first hypothesis is confirmed for frequency, but not for form and distribution. The second and third hypothesis is confirmed by the result. The fourth hypothesis is confirmed for frequency and form, but not for distributions of illocutionary speech acts.
6.2.1 An Illocutionary Rise

There is a significant rise in frequency of the children’s speech acts per session. Four out of six children produce over 50 speech acts during the last two sessions, while five out of six children produced fewer than 25 speech acts during the first session. Since the analysis take non-verbal acts into consideration, the result shows that it is not only utterances that increase in numbers and length, but that the child gradually becomes more active as an interlocutor.

When comparing these results with the ones from the French study by Ryckenbusch and Marcos, they are very similar. The French children produced 36.8 speech acts during 10 minute sessions at 1;3 years of age. The Swedish children produced 21 speech acts during 5 minute sessions at 1;0. The French children produced 98.45 speech acts during 10 minute sessions at 2;7 years of age. The Swedish children produced 48.5 speech acts during 5 minute sessions at 2;6.

The mean of the Swedish parents’ speech acts per session was 98.75.

6.2.2 MLSAw

If MLSAw is not context related, then the children’s significant movement towards the MLSAw of their parents might just be a consequence of the general rise of MLSAw. If MLSAw is context related, the children’s movement towards the MLSAw of their parents is noteworthy. The result would not only indicate that the form of speech acts gradually get more complex, but that the significant rise towards the parent’s output entails an movement to a specific contextual norm. The sessions are very dynamic, and different types of interaction seem to encourage different types of speech acts and forms. This does not have to be a particularly advanced transition. For the child engaging in the interaction, the act of describing an object might go from just saying a predicative, to using a pronoun together with a copula and a predicative. If the topic of discourse is kindergarten, a lot of proper names (of friends and teachers) will arise in the data, both from the child and the parent.

At each individual session the parent’s MLSAw is higher than the children’s MLSAw. This is interesting since the parents are not consistent in their MLSAw. At 1;0 all parent’s show an MLSAw between 2.4 and 3.0. At 2;6 the MLSAw goes from 2.6 to 4.3. This might be a general pattern. Perhaps the form of illocutionary acts shows more similarity among parents of young children, and then the similarities fade as the children grow older?

Since both frequency and MLSAw is simultaneously rising significantly, the distributions indicate what kind of illocutionary acts that are becoming more frequent and more advanced, e.g. between 1;6 and 2;0, assertives is the most affected act; they double in frequency and the acts get approximately one word longer.

6.2.3 Outliers

5M2Z

Test subject 5M2Z showed a notable MLSAw result, especially in contrast to the subject’s result in total frequency. The mean length of speech acts in words stays around one word per speech act, throughout all four sessions. However, there is a significant rise in frequency, especially between the sessions that take place when the child is 1;6 and 2;0 years of age, going from 24 to 62 speech acts per session. 5M2Z stands out as an outlier at 2;6 in the chart of the children’s percentage of their parents’ MLSAw. There is a rise in the parent’s MLSAw at 2;6 which indicates an increase in complexity of the parent’s speech acts. 5M2Z has the second lowest vocabulary size of all six children. A possible
interpretation is that though the subject is mostly producing one-word-utterances, the subject is highly communicative and understands the parent sufficiently.

8M0Z

Test subject 8M0Z shows a consistent lower frequency than all the other children. At 1;6, the result of 8M0Z’s MLSAw is 0.7 words per speech act, which is the lowest MLSAw value in the study. The test subject also has the smallest vocabulary size. The parent’s MLSAw curve shows the most dramatic change, going from the highest value at 2;0 to the lowest value at 2;6. When looking at the chart of the children’s percentage of their parents’ MLSAw, the child’s MLSAw is moving closer towards the parent’s MLSAw at 2;6. However, this rise is due to the parents drop, rather that the child’s increase, of MLSAw.

6.2.4 The Parents’ Assertives

Assertives are the most frequent illocutionary acts in the parents’ distribution. They are describing and defining objects or concepts. Proper names, determined noun phrases, and anaphoric pronouns are ascribed specific properties and qualities.

An illocutionary pattern between assertives and information requests was found in all of the sessions. Each parent made several information requests that were directly followed by an assertive, without a response from the child in-between. When examining the raw data, it showed that all parents, to some extent, asked their children questions, which they then answered themselves\(^{11}\). The parent of 5M1Z holds a flower in front of the child and asks (7) and then follows up with (8). The parent of 7M2Z makes a deictic gesture towards a stuffed animal and asks (9) and then directly says (10).

\[(7) \text{what colour is this?} \]
\[(8) \text{this is yellow} \]
\[(9) \text{what’s her name?} \]
\[(10) \text{her name is na} \]

During this illocutionary pattern, many children are passive as interlocutors, observing their parent. Perhaps this pattern is initially a way of teaching a child a general question-answer structure? When the parents leave out the assertive response, most children will provide some kind of answer. Perhaps the children recognize that something is missing from the construction, and then they fill in the missing piece.

Assertives were the most frequent illocutionary act in the study by Ryckebush and Marcos (2004:10), and made out 50% of the total distribution. In this study, the assertives made out 40% of the distribution.

6.2.5 The Children’s Assertives

Assertives are overall the most frequent illocutionary act in the output from the children. The illocutionary rise in frequency is mostly consisting of assertives. Between 1;6 and 2;0, four of the children go from producing between 5 and 15 assertives, up to a span of 35-55 assertives. The children’s assertives often function as responding acts to the parents’ information requests.

\(^{11}\) A list of all instances of the information request-assertive pattern for all parents can be found in appendix A
Some of the children’s assertives have a directive quality. They make general statements about the world, and then the parent confirms whether the content of their assertive act is true or false. There is however no prosodic features or gestural indications of uncertainty, which support the classification of the acts as assertives.

6.2.6 The Parents’ Directive (Information requests)

The second most frequent illocutionary act in the parents’ distribution is information request. As mentioned above (6.2.4), there is a pattern of information requests and assertives, and each parent displayed this behaviour to some extent. Aside from these constructions, many information requests are questions directed at the child about the setting and the situation. The parent establishes a referent, and then asks the child to name it or describe it. In most cases, the parents already have access to the information they want the children to provide. It seems as if they are looking for confirmation of the fact that the children are aware of, and comprehend the situation.

6.2.7 The Children’s Directive (Information requests)

Five out of six children produces information request at 2;6. There are no visible patterns or correlations of frequency during the earlier sessions. All information requests produced by the children concerned the objects that were at their disposal during the sessions, or the cameras that were recording them.

6.2.8 The Parents’ Expressives

Expressive is the third largest illocutionary act in the parents’ distribution of illocutionary acts. One of the main functions of expressives seems to be the establishment of general positive and negative values. The parent performs positive expressive acts when the child’s focus is directed towards flowers, stuffed animals, or a grandparent standing outside the laboratory. When the topic of discourse is insects, monsters, and bad behaviour, the parent performs negative expressive acts, e.g. frowning, shaking their heads, and dropping pitch.

All illocutionary acts can have expressive qualities (6.1.4). There are a few cases where an expressive is performed with the locution of another type of speech act. The child 7M0Z performs an action request and says “look”, asking the parent to look at an object in a basket. The child then takes the object out of the basket, and the parent repeats the child’s utterance, “look”. The parent’s utterance is high pitched, the vowel is extended, and the parent is nodding with a smiling facial expression. It seems as if the parent is confirming that the child’s illocutionary act was appropriate for the situation. The parent’s illocutionary act is classified as an expressive.

Expressives are also present in situations where the parents are persuading or comforting their child.

6.2.9 The Children’s Expressives

Expressives are the second most frequent illocutionary acts in the children’s distribution. These acts display attitude towards situations, rather then propositions. Many of the expressives that appear in the two earliest sessions, at 1;0 and 1;6, consist of non-lexical vocalisations that appear together with a frowning facial expression.
6.2.10 The Parents’ Directive (action requests)

All parents perform more action requests during their first session, at 1;0, than during any of the other sessions. One explanation can be that as the children grow older, and as they become more active interlocutors, the need for the parents to explicitly explain and give directions will decrease.

It has been shown in previous studies that action requests will appear in greater numbers, if the interaction is task oriented. Many of the action requests in the data are performed when the parent tries to make the child play a certain game or put an object in a specific place. Even though these situations were too short and too few to examine statistically, the data indicate that task related interaction would have increased the frequency of action requests.

6.2.11 The Children’s Directive (action requests)

There were very few action requests performed by the children. All instances shared a common goal: to make the parent include specific objects in the interaction.

6.2.12 Commissives

All commissives that appear in the parent’s distributions are located in the first seconds of the session, when the dyad is alone in the recording room. The child wants to play with the researchers, and when the researchers have left the room, the parent assures the child that the researchers will soon be back.

The child 7Z2M performed two commissive act during the session at 2;6. Both acts were of the same kind as the ones that some parents made, concerning the researcher and when he or she would return.

6.2.13 Exclusively Gestural Illocutionary Acts

Non-lexical vocalizations and gestures, or gestures alone, are the basis for a few illocutionary acts in the data. Assertives are made with deictic gestures, pointing out referents as a response to an information request. Two deictic gestures, made by the child 6M0Z at 1;0, are classified as directives (action requests): The parent offer an object to the child, the child takes it. The child then makes a deictic gesture towards another object and the parent hands it over to the child. The child then makes another deictic gesture towards a third object, which the parent also hands over. This example also demonstrates the interpretation of illocutionary acts by reaction, and reactions to reactions12.

6.2.14 Answering the Research Questions

1. Are parents’ frequency, form and distribution of illocutionary speech acts correlated with the age of their child?

The frequency of the parents’ speech acts per session does not correlate significantly with the age of the child. There might be individual differences in speech act frequency between the parents, but the sample showed a normal distribution. The form of the parents’ speech acts, in terms of MLSAw, does increase significantly as the children grow older. However, the distribution between parents is wider at 2;6 than at the other three ages. One of the illocutionary acts, directive (action request) appear to decrease, as the children grow older. No other over-arching patter is observed in the parents’ distributions.

12 As mentioned in section 2.3.
2. In what ways do children's production of speech acts change between 1;0 and 2;6 years of age?

There is a significant rise in frequency of the children’s speech acts per session. The mean of the children’s speech acts at 1;0 is 21 per session. The mean of the children’s speech acts at 2;6 is 49.3 per session. The form of the children’s speech acts, in terms of MLSAw, get more complex. There is a significant rise of the children’s MLSAw in correlation with the age of the child. There is also a significant movement within the parent-child dyads, where the child’s MLSAw is getting closer to the MLSAw of the parent. From 1;6, assertives are over-represented in the children’s distribution. No other visible patterns are observed in the children’s distribution.

3. Is the same hierarchical order of illocutionary acts that the French parents showed, found in the Swedish parents’ distribution?

The same size order was found. They appear in a decreasing scale with assertives on top, followed by directives (information requests), expressives, directives (action requests), and commissives.

4. Do the children show a development towards their parents’ frequency, form and distribution of illocutionary speech acts?

The mean of the parents’ speech act frequency was 98.4 per session. During all 24 sessions, no child produced more speech acts than his or her parent. There is a movement towards a higher number of speech acts, and also a visible increased activity by the child as an interlocutor. The form of the speech acts, in terms of MLSAw, show a significant movement within the parent-child dyads, where the gap between parent and child decreases over time\(^{13}\). The children and the parents share assertives as the overall most frequent illocutionary act. Besides assertives, there are no visible patterns between the children’s and the parent’s distribution of illocutionary acts.

\(^{13}\) There was one outlier in the MLSAw data, accounted for in section 6.2.3
7 Conclusion

In this study, the frequency, form, and distribution of illocutionary speech acts in Swedish parent-child interaction was examined. The purpose of the study was to examine the children’s development of these phenomena, and to correlate the result with the parents’ frequency, form and distribution. There is a significant rise in frequency of the children’s illocutionary speech acts between the ages of 1;0 and 2;6. The mean length of speech acts in words also increased significantly. When correlating the children’s part of their parents MLSAw with the MLSAw of the parent, there is a significant rise of the children’s MLSAw towards the MLSAw of the parents. This is noteworthy, since the parents are not consistent in their MLSAw.

Results from a previous study showed that French parent’s distributions of illocutionary speech acts followed a hierarchical order, with assertives as the most frequent illocutionary act. The same hierarchical order was found in the Swedish parent’s distribution. Assertives are also the most frequent illocutionary act in the children’s distribution. For the last two sessions, assertives make out more then 70 percent of the children’s total distribution.

A very small sample can at best provide indications of general patterns and behaviours. These results indicate that the children gradually become more active as interlocutors, and perform more, and more complex, statements about the world between the ages of 1;0 and 2;6. There are also indications that the parents’ frequency and form can be treated as a baseline for the children’s development of these features, though further research is needed.

7.1 Questions for Future Studies

- Is MLSAw context sensitive?
- Can the hierarchical order of illocutionary acts in parent-child interaction be found in more languages than French and Swedish?
- Does the frequency of the parent’s speech acts follow a normal distribution, if tested on a larger sample?
- How does the children’s distribution of illocutionary acts change after 2;6 years of age?
References


Appendix A

The number of times each parent makes an information request-assertive construction during each session.

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