

Explicit or Implicit? Children's Ability to Answer Contextually Demanding Questions

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Abstract

In communicative situations, it may happen that children can answer the question with certain contextual demand rather than another. In this case, it is pragmatic or situational factor that affects children's performance. Using Sperber and Wilson's (1995) Relevance Theory as framework, this study investigated 50, 3-7, year-old Mandarin-speaking children's ability to use context when answering contextually demanding questions. It likewise examined the types of compensatory comprehension strategy employed by these children when they were in the absence of full comprehension. Results showed that when answering the questions, children progressively applied more complex contextual information to their comprehension process as they aged. Seven types of compensatory comprehension strategies were used by the children: *World knowledge and own experience*, *Given information*, *Don't know*, *Irrelevant*, *Keep silence*, *Tautology* and *Turn-taking*. Results could be considered useful for curriculum developers of pre-school and school language programs and for language teachers to strike a balance between being implicit and explicit in materials development and language teaching.

Key words: relevance theory; context; reference assignment; enrichment; implicature; compensatory comprehension strategy

Introduction

In conversation, it is commonly said that young children are more likely to respond to questions rather than non-questions (Hoff, 2001). Children's ability to answer questions is associated both with

their increasing linguistic and pragmatic ability to deal with questions. In communicative situations, it may happen that children can answer a question of a particular grammatical form in one context but not in another. Further, there is also the case that children can answer the question with certain contextual demand rather than another. In these cases, instead of linguistic form, it is pragmatic or situational factor that affects children's performance. Development of pragmatic comprehension can be seen as a complex process in which children progressively use context to construct meaning and interpretation. It is quite evident that children are able to take context into account as they begin to communicate (e.g., Maratsos, 1973; O'Neill, 1996). At the very beginning children strongly make use of physical nonverbal context to understand utterance (Strohner & Nelson, 1974), and with increasing age they start to integrate and connect information from other sources as they encounter communicative tasks that require different contextually processing demands (Bucciarelli et al., 2003).

A relatively basic kind of contextual operation in early comprehension involves the identification of referents in context. Maratsos (1973), in her study about nonegocentric communication abilities in preschool children, administered a very simple referential communication task to 24 children aged 3 to 5 years. Each child was randomly assigned to either the normal-vision condition, in which the experimenter could see, or the blocked-vision condition, in which the experimenter could not. A wooden hill with a toy car on top of it was taken out and placed on the table between the experimenter and the child. In the blocked-vision condition, some people and animals were placed on top of the hill and the child answered which one should be put inside the car. Instructions for the normal-vision condition were identical except that the experimenter could see the referents. Results showed that the children were more verbally explicit in communicating to the experimenter who could not see the referents than to those who could see. Maratsos concluded that in a simple experimental communication task, young children could consider important aspects of the listener's situation.

Consistent with Maratsos' (1973) finding, Bezuidenhout and Sroda (1998, in Foster-Cohen, 2000) examined 2-6-year-old children's

ability to resolve speaker's intended referent in light of Relevance Theory (Sperber & Wilson, 1995). Children were presented either a control story (The Tortoise and the Hare) or an experimental story. The experimental story included situations where the speaker produced referentially correct and incorrect messages and the listener answered in different ways depending on their interpretation. Two days after, the children were tested in two conditions in order to see how children understood information which was available for the speaker. The experimental story group did not perform better than the control story group. When determining speaker's intended referent, even 3-year-old children were capable of taking into account information about the speaker's perspective, suggesting that rather than being egocentric communicators, young children had communicative abilities which broke down if the situation was demanding.

On the other hand, according to Bishop (1997, in Ryder & Leinonen, 2003), at the very beginning children strongly employ physical or environmental context to understand utterance and thus their first communicative attempts are tightly associated with the physical "here and now". Strohner and Nelson (1974) examined the effect of event probability, nonverbal context, syntactic forms and strategies on sentence comprehension under two experiments. They defined compensatory strategies, or heuristics, as those strategies used in an attempt to appear to understand, in the absence of full comprehension. Experiment 1 was aimed to look for the different strategies that 2-5-year-olds might use in comprehending sentences. At age 2 and 3, the children demonstrated minimum use of syntactic information and maximum use of the probable-event strategy. At age 4 the children applied the actor-action-object strategy as actives were easier to act out than passives in the case of both probable and improbable sentences. At age 5, children typically relied on syntactic information and correctly interpreted sentences. In the second experiment, 89 4-year-olds were tested before and after training session where pictures were used to show both probable and improbable events. When pictures were used to show both probable and improbable events, the actor-action-object strategy was

rarely used. Children's tendency toward "actor-action-object" strategy depended on the nonverbal context. The findings demonstrated that young children rely strongly on immediate nonverbal contexts, e.g., knowledge of their world (event probability) or pictures, rather than linguistic meaning, when comprehending sentences.

However, even if children start to utilize contextual information already in their first communicative attempts, only after development continues do children begin to integrate and use more diverse contextual information to proceed and enhance comprehension. For example, for indirect utterances, there is differing processing demands according to the pragmatic complexity and children's performance have been proven to be affected by the processing demands. Bucciarelli et al. (2003) compared children's performance in different kinds of pragmatic comprehension tasks based on the theory of cognitive pragmatics derived from Speech Act Theory (Austin, 1962; Searle, 1975). One hundred sixty children aged 2.6 to 3.0 years, 3.6 to 4.0 years, 4.6 to 5.6 years, and 6.0 to 7.0 years (40 children each age range) participated in the study. In each group half of the children were randomly selected to use the linguistic protocol and other half of children to the gestural protocol. Children were shown videotaped stories of everyday interactions. Stories included different types of pragmatic phenomena: directs, simple indirects, simple deceits, simple ironies and complex indirects. Results showed that children's ability to interpret different pragmatic meanings increased with age. Simple direct requests and simple indirect requests were easily comprehended by children from 2.6 to 7 years. However, it was much more difficult for all age groups to process complex indirect utterances. This suggested that even if these young children were able to utilize contextual information in simple familiar situations, they had difficulties in more complex tasks where they had to consider and connect information from different, more demanding and less familiar sources.

Moreover, a study by Ryder and Leinonen (2003) applies Relevance Theory (Sperber & Wilson, 1995), by using questions demanding reference assignment, enrichment, and recovery of implicature to English children aged 3;6 to 5;6 years. A story was read

to them and they were asked these types of questions. Incorrect/irrelevant answers were regarded as compensatory comprehension strategies reflecting how the children used context. The researchers discovered that the ability to use contextual information was related to age. Three-year-old children were able to utilize context when interpreting pronominal reference and showed an emerging ability to answer enrichment questions, but they had not yet developed an ability to answer implicature questions. Comprehension of enrichment and implicature questions developed rapidly after the age of 4. Results also showed that as children developed, change in the types of compensatory strategy reflected increasing ability to use relevant contextual information.

Until now, most of the studies have used children within narrow age range to investigate children's pragmatic comprehension (e.g. Strohner & Nelson, 1974) and studies on pragmatic development in other languages have been scarce. Mandarin Chinese, different from English, is verb-friendly in that verbs and nouns have equivalent morphological transparency: neither verbs nor nouns are inflected (Li et al., 1993). Thus, the morphology of Mandarin nouns and verbs is equally simple and consistent across contexts of use, whereas the morphology of English nouns is relatively simple compared with that of English verbs. Moreover, Mandarin also differs from English (a non pro-drop language, SVO linguistic structure) in this respect: it allows noun dropping, i.e. the subject of a sentence can often be omitted, creating verb-initial (VO) sentence. It is not clear whether these grammatical characteristics of Mandarin would have an effect on Mandarin-speaking children's use of context. Thus, it would be necessary and interesting to examine children with larger range of age speaking Mandarin Chinese.

Theoretical Framework

Relevance Theory (Sperber & Wilson, 1995; Wilson & Sperber, 2004) has been used as the theoretical framework of the present study since the theory guides the hearer towards speaker's intended meaning on the basis of contextual information and explains how the

meaning is processed.

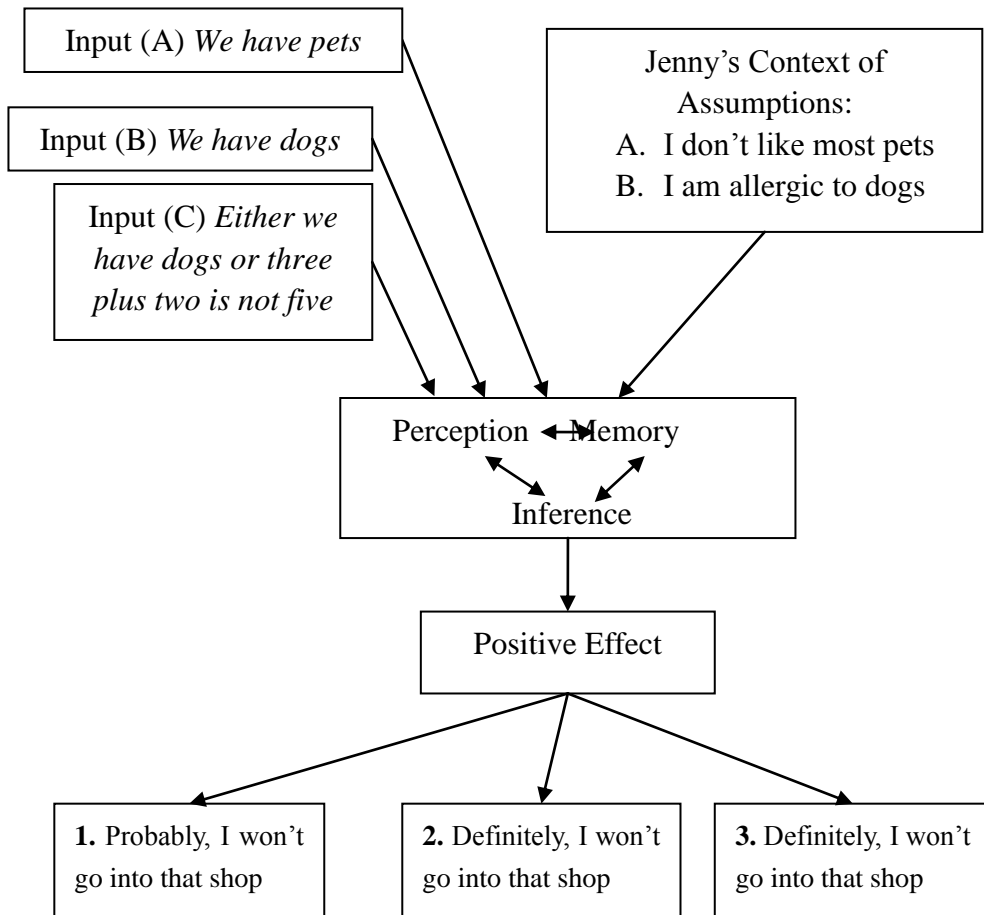
1 Principles of Relevance Theory

According to Wilson and Sperber (2004), any external stimulus (e.g., an utterance) or internal representation (e.g., a memory) provides an input which is relevant to an individual “when its processing in a context of available assumptions yields a POSITIVE COGNITIVE EFFECT” (p. 608). Such cognitive effect results from the interaction of newly presented (new) and existing (old) information, specifically, new strengthening old, new contradicting (and eliminating) old, or combining new with old to produce a contextual implication. Paying attention to an input is not simply because it is relevant, but it’s more relevant than any other inputs accessible at that time. Degrees of relevance can be assessed in terms of cognitive effects and processing effort, suggesting the following comparative notion of relevance (Wilson & Sperber, 2004, p. 610):

- (1) Relevance of an input to an individual
 - (a) Other things being equal, the greater the positive cognitive effects achieved by processing an input, the greater the relevance of the input to the individual at that time.
 - (b) Other things being equal, the greater the processing effort expended, the lower the relevance of the input to the individual at that time.

Here is an artificial example on comparison of the degree of relevance in terms of effort and effect, using several inputs.

Jenny, who doesn’t like most pets and is allergic to dogs, is standing beside a new pet shop where any of the three notices is being put up: (A) *We have pets*; (B) *We have dogs*; (C) *Either we have dogs or three plus two is not five*. Analysis of the example can be diagrammed as follows:



Following the previous discussion, all three inputs would be relevant to Jenny but the degree of relevance would vary. As far as cognitive effect is concerned, input (A) may lead to the conclusion that *probably, I'll not go into that shop*; (B) would make Jenny conclude that *Definitely, I'll not go into that shop*; and (C) will have the same conclusion as that of (B). Thus, (B) and (C) achieve stronger cognitive effect than (1). However, in comparison with (A) and (B), (C) requires an additional effort of parsing and inference in order to work out that the second disjunct *three plus two is not five* is false and the first *we have dogs* is therefore true. Thus, deductively, input (B) would be the most relevant input to Jenny.

As reflected in the above example, there are so many inputs coming into people's mind and people have to make the most efficient use of the available processing resources: perception, memory and inference in order to reduce the processing effort, increase the cognitive effects, and consequently, maximize the relevance. As a result of biological evolution, people can automatically use maximal cognitive effect for minimal processing effort (Wilson & Sperber, 2004, p. 612):

(2) Cognitive Principle of Relevance

Human cognition tends to be geared to the maximization of relevance

Therefore, it is possible for one to predict and influence the mental states of others, at least to a certain degree, in view of the universal cognitive tendency. A speaker may be able to design a stimulus which most attracts the hearer's attention, retrieve certain contextual assumptions most quickly, and direct the hearer towards an intended effect. This kind of stimulus is called ostensive stimulus, in relevance-theoretic terms. By its definition, Communicative Principle of Relevance comes out (Wilson & Sperber, 2004, p. 615):

(3) Communicative Principle of Relevance

Every ostensive stimulus conveys a presumption of its own optimal relevance.

What the Communicative Principle of Relevance says is that ostensive stimulus (e.g., utterances) establishes an expectation of optimal relevance rather than of maximal relevance in the addressee. This is because: A) the speaker may be unable or not have enough time to think of, or not be competent to utter, the most relevant information at that time; and B) the speaker may be unwilling to give, or stylistic preference may prevent the speaker from choosing, the best possible information. Taking these factors into account, Wilson and Sperber (2004, p. 615) propose the presumption of optimal relevance:

(4) Optimal relevance

An ostensive stimulus is optimally relevant to an audience iff:

- (a) It is relevant enough to be worth the audience's processing effort;

- (b) It is the most relevant one compatible with communicator's abilities and preferences.

In verbal communication, utterances usually have many possible interpretations compatible with the linguistic information, but all of them are not equally accessible in a given situation and human communication is driven by search for relevance. That is, an utterance should be relevant enough for the hearer to make it worth processing and clear enough so that the speaker can manifest his/her intention. In order to understand the speaker's intention, the hearer has to utilize information communicated directly and indirectly and the information not communicated at all. Therefore, the linguistic forms of utterances have to be processed and interpreted in these relevant contexts in a variety of ways so as to reach the real meaning of the speaker, including disambiguation, reference assignment, enrichment and recovery of implicature. For better performance of these ways, the relevance-theoretic comprehension procedure is suggested by Wilson and Sperber (2004, p. 618):

- (5) Relevance-theoretic comprehension procedure
- (a) Follow a path of least effort in computing cognitive effects:
 - Test interpretive hypotheses (disambiguations, reference resolutions, implicatures, etc.) in order of accessibility.
 - (b) Stop when your expectations of relevance are satisfied.

2 Pragmatic Subtasks in Comprehension Process

The hearer's goal is to work out the speaker's intended meaning, which can be broken down into a number of sub-tasks: disambiguation, reference assignment, enrichment and the recovery of implicature. To illustrate, consider the following exchange:

- 1) *Peter (husband): May I go out for a while?*
Mary (wife): Your dinner's ready.

To comprehend Mary's answer, the linguistic expression *Your dinner's ready* now needs to undergo a number of processes:

Reference assignment: *Your* refers to Peter's.

Disambiguation: 's (present tense) means now/at the moment.

Enrichment: *dinner* means the dinner that Peter is about to eat; *ready*

means “ready to eat”.

Thus, the meaning (explicature) of the expression can be summarized as follows: The dinner that Peter will eat is ready now. However, this is not the meaning that Mary intends to express. Hence, based on our world knowledge or prior experience, the following assumptions might be included for reasoning:

2) *When husband’s dinner is ready, wife wants him to eat immediately.*

3) *Going out for a while takes some time.*

4) *Therefore, wife may not want her husband to go out for a while.*

By combining the above explicature with the sets of assumptions, Mary’s intended meaning, i.e. the implicature, is obtained:

Implicature: Mary may not want Peter to go out for a while.

As discussed, for reference assignment, the hearer just has to find out the object of reference from the context and no processing beyond the given information is needed. Disambiguation is used to determine which lexical items are potentially ambiguous and for doing so, we need to know the content of their semantic systems. This is not the focus of the present study, thus, disambiguation is not included in this study. The semantic interpretation of a sentence from which ambiguities and referential indeterminacies have been resolved is still something less than fully propositional. In this case, the process of enrichment is needed. In order to recover implicature of an utterance, extra processing is needed by retrieving and integrating contextual information via reasoning.

The present study aims to investigate how 3-7-year-old Mandarin-speaking children answer contextually demanding questions on the basis of Relevance Theory (Sperber & Wilson, 1995). This study also aims to examine compensatory comprehension strategies employed by these children in the absence of full comprehension. Specifically, the present study attempts to answer the following questions:

1. How accurately do the Mandarin-speaking children answer reference assignment, enrichment and implicature questions?
2. Does age have an effect on the correctness of the three types of questions?

3. What types of compensatory comprehension strategies are used by the children when they are in the absence of full comprehension?
4. Does age have an effect on the use of these strategies?

Method

Participants

Fifty children (ten children for each age range) were involved in the study: 30 children aged 3 to 5 were selected from Xinyu Peilei Kindergarten, China, and 20 children aged 6 to 7 were chosen from Xinyu No. 4 Elementary School, China. All children were monolingual Mandarin-speaking and lived in the city of Xinyu, China, from varying class families. They were the only child in their families because of China's one-child policy.

Materials

Three scenarios (see Table 1 below) translated into English and accompanying pictures (see Appendix A-C) were adopted from a book by Linlan (2008) which was considered suitable for children aged 3 to 7 by its publisher. Texts/Scenarios were analyzed according to whether the processing involved reference assignment, enrichment, or recovery of implicatures. In addition to the three question types, the children were asked follow-up questions to give explanation for their answers to enrichment and implicature questions. The follow-up question appears in the form of "What makes you think so?" or "Why do you think so?" and was used to see how the children derived their answers to enrichment and implicature questions from context. Thus, the material contained 20 questions in total: four reference assignment, four enrichment, four implicature, and eight follow-up questions. The three verbal scenarios and the three types of questions to be investigated were presented as follows: (not including follow-up questions)

Table 1
Scenarios and Questions Designed Before Pilot

Scenarios and pictures	20 Questions and Its Types
(1) The clock is ringing. Wenwen gets out of the bed. He puts on his cloth, brushes his teeth, and washes his face. Now he is having bread and drinking milk beside the dinner table there.	1. Who is having bread and drinking milk? (RAQ)
	2. What time might "now" be? (EQ)
	3. Where might "there" be? (EQ)
	4. What is Wenwen having? (RAQ)
(2) What a cold day now! Little bear Beibei trembles with cold. His mother brings him a skipping rope and makes him skip outside. Unwillingly, Beibei jumps and he takes off his hat and scarf.	5. Who takes off the hat and scarf? (RAQ)
	6. Which season might "now" mean? (EQ)
	7. Why does Beibei's mother give him a rope? (IQ)
	8. Why does Beibei skip unwillingly? (IQ)
(3) It's raining, a little ant runs to a mushroom. A snail comes there, too. After a while, a rabbit also comes over. He bangs the mushroom down as soon as he squashes in.	9. Who bangs the mushroom down? (RAQ)
	10. Why does the little ant run to the mushroom? (IQ)
	11. Why does the rabbit bang the mushroom down? (IQ)
	12. Where might "in" be? (EQ)

Note. RAQ=Reference Assignment Question, EQ=Enrichment Question, IQ=Implicature Question

In order to see whether the scenarios and questions were appropriate for the children, a pilot study was conducted prior to the actual experiment. Two 3-year-old children (one boy and one girl) were involved. Results revealed that the questions designed were valid as the children could utilize context when answering them. However, when giving the fifteenth or sixteenth question, the two children showed impatience and distraction. Therefore, in view of high demands for the 3-year-olds in the number of the questions, 20 questions were reduced to 15 questions: three reference assignment, three enrichment, three implicature, and six follow-up questions (not displayed in Table 2):

Table 2
Scenarios and Questions Designed After Pilot

Scenarios and pictures	12 Questions and Its Types
(1) The clock is ringing. Wenwen gets out of the bed. He puts on his cloth, brushes his teeth, and washes his face. Now he is having bread and drinking milk beside the dinner table there.	1. Who is having bread and drinking milk? (RAQ)
	2. What time might "now" be? (EQ)
	3. Where might "there" be? (EQ)
(2) What a cold day now! Little bear Beibei trembles with cold. His mother brings him a skipping rope and makes him skip outside. Unwillingly, Beibei jumps and he takes off his hat and scarf.	4. Who takes off the hat and scarf? (RAQ)
	5. Which season might "now" mean? (EQ)
	6. Why does Beibei's mother give him a rope? (IQ)
(3) It's raining, a little ant runs to a mushroom. A snail comes there, too. After a while, a rabbit also comes over. He bangs the mushroom down as soon as he squashes in.	7. Who bangs the mushroom down? (RAQ)
	8. Why does the little ant run to the mushroom? (IQ)
	9. Why does the rabbit bang the mushroom down? (IQ)
<i>Note.</i> RAQ=Reference Assignment Question, EQ=Enrichment Question, IQ=Implicature Question	

Procedure

Once permission and assistance were given by Xinyu Peilei Kindergarten and Xinyu No. 4 Elementary School, each child was interviewed individually in a quiet room. Children aged 3 and 5 were interviewed in their kindergarten and children aged 6 to 7 in their school. The children were told that the experimenter would tell them three scenarios and ask some questions and they should listen very carefully. Then, the experimenter verbalized the first scenario, presented to them accompanying pictures, and asked them the corresponding questions. This process was done until the questions about the last scenario were asked. In the course of the interview, two children in the kindergarten might have been very nervous and they kept silence all the time. Thus, they were excluded and another two took their place. The whole interview session was audiotaped and

after the recordings, the audio files were translated into English and then transcribed.

Data Analysis

The correctness of the answers to the three types of questions was assessed using a key to correction provided by Linlan (2008). Then, the experimenter counted the frequency of correct answer to answer the first research question.

Children's types of incorrect answers (compensatory comprehension strategy) were then recognized and categorized based on the context used to answer the third research question. To illustrate, consider 5) and 6):

5) *Experimenter: Why does the little ant run to the mushroom?*

Child: Because... there's thunder when it's raining.

6) *Experimenter: What time might "now" be?*

Child: ...Windy and raining.

In 5), the child used his world knowledge to answer the question incorrectly, so the compensatory comprehension strategy used would be *World knowledge*. In 6), an irrelevant (thus incorrect) answer was provided by the child, so *Irrelevant* was taken as the compensatory strategy used

Statistical Treatment

One-way ANOVA in SPSS11.5 was adopted for statistical treatment and the level of significance was $p < .05$. To answer the second research question, age group was considered as independent variable while the total correct answers (consisting of correct answers to all questions), and correct answers to reference assignment, enrichment, and implicature questions, respectively, were regarded as dependent variable (four dependent variables in total). ANOVA was also used to answer Question 4 by taking age group as independent variable and types of incorrect answers, i.e., compensatory strategies, as dependent variables.

Results

Research Question 1: Correctness in Children's Question Answering

Table 3 presents a summary of children's correct answers to the three types of questions.

Table 3

Summary of correct answers to the three types of questions

Age group	Correct answers of						Total (90)	
	RAQ (30)		EQ (30)		IQ (30)		f	%
	f	%	f	%	f	%		
3	18	60%	11	36.67%	8	26.67%	37	41.11%
4	28	93.33%	20	66.67%	14	46.67%	62	68.89%
5	26	86.67%	25	83.33%	24	80%	75	83.33%
6	30	100%	28	93.33%	28	93.33%	86	95.56%
7	30	100%	30	100%	30	100%	90	100%

Note. RAQ= reference assignment question; EQ= enrichment question; IQ= implicature question; f= frequency; %= percentage; maximum number of correct answers is given in parentheses.

As shown, for each age-group, RAQ produces the highest number of correct answers while IQ the lowest number. The 3-year-olds are able to (18, 60%) answer RAQ and show an emerging ability (11, 36.67%) of comprehending EQ, but they have difficulty to answer IQ. Such similar pattern appears for the 4-year-olds (IQ: 14, 46.67%; EQ: 20, 66.67%; RAQ: 28, 93.33%), with the exception that the emerging ability now falls on IQ. This is the same as the 5-year-olds (IQ: 24, 80%; EQ: 25, 83.33%; RAQ: 26, 86.67%). When answering questions, the 6- and 7-year-old children perform near ceiling (all > 90%). It is worth noting that the 4-year-olds (28, 93.33%) answer RAQ more correctly than the 5-year-olds (26, 86.67%). Moreover, in answers to other question types, remarkable developmental progress occurs between the ages 3 and 4 years, whereas in answers to IQ, the most

remarkable developmental progress takes place between the ages 4 and 5 years, followed by 3 and 4 years.

As far as total correct answer is concerned, its number increases with increasing age. The development progresses most actively between the ages 3 and 4, i.e., over 25% more 4-year-olds answer all questions correctly than do 3-year-old children, after which development progresses more steadily. The age group of 5 years gives nearly 15% correct answers more than the 4-year-olds, while the groups aged 6 and 7 show almost perfect performance when answering all questions with a percentage of 95.56% and 100%, respectively. Thus, a developmental pattern could be found with regard to the 3-, 4-, 5-, 6-, and 7-year old children's ability to answer questions that show increasing pragmatic complexity.

Research Question 2: Effect of Age on Total Correct Answers and on Correct Answers to Three Question Types Respectively

ANOVA was used to make a comparison among age groups in total correct answers and in correct answers to three types of questions, respectively. As computed, there is a significant effect of age ($p=.00$) for total correct answers. Age group comparisons reveal that a significant difference in total correct answers is evident between all other age groups with the exception of 6- and 7-year-olds ($p=.43$). Comparison between the 4- and 5-year-olds does not quite reach significance ($p = .01$).

Results from ANOVA also indicate a significant difference among age groups for reference assignment questions ($p=.00$), enrichment questions ($p=.00$), and implicature questions ($p=.00$), respectively.

For the reference assignment questions, there's a significant difference between the group aged 3 and other age groups ($p=.00$, respectively). However, comparisons between the 5- and 6-year-olds and between the 5- and 7-year-olds do not quite reach significance ($p = .02$, respectively). In addition, there is no significant difference when comparing age groups of 4 and 5 years ($p=.21$), 4 and 6 years ($p=.21$), 4 and 7 years ($p=.21$), and 6 and 7 years ($p=1.00$).

For the enrichment questions, there is a significant difference between 3- and 4-year-olds ($p=.00$), 3- and 5-year-olds ($p=.00$), 3- and 6-year-olds ($p=.00$), and 3- and 7-year-olds ($p=.00$). Comparisons between 4- year-olds and other age groups show that the age group of 4-year-olds also differs from the age group of 6 years ($p=.01$) and 7 years ($p=.00$).

For the implicature questions, on the other hand, differences between 3-year-olds and other age groups are significant except for the age group of 4 years. Besides, there is no significant difference between 5- and 6- year-old children and between 5- and 7- year-olds.

Research Question 3: Types of Compensatory Strategy

Table 4 shows seven types found and corresponding examples.

Table 4

Seven Types of Compensatory Strategy and their Examples

Type	Example
1. <i>World knowledge and own experience:</i> The child uses world knowledge or his/her own experiences in an inadequate way that does not fit into the particular context of the question	<i>Experimenter: Why does the little ant run to the mushroom?</i> <i>Child: Because there's thunder when it's raining.</i>
2. <i>Given information:</i> The child uses given pictorial or verbal information to answer the question and the answer is not relevant enough to this particular question.	<i>Experimenter: Where might "there" be?</i> <i>Child: Bed.</i>
3. <i>Don't know:</i> The child gives the answer "I don't know".	<i>Experimenter: Why does the little ant run to the mushroom?</i> <i>Child: ...I don't know.</i>
4. <i>Irrelevant:</i> The child gives an answer that is not relevant at all to the context of the asked question.	<i>Experimenter: What time might "now" be?</i> <i>Child: ...Windy and raining.</i>
5. <i>Keep silence:</i> The child gives no reply and keeps silence.	<i>Experimenter: Who is having bread and drinking milk?</i> <i>Child: ...((keep silence)).</i>
Cont. Table 4	<i>Experimenter: What time might "now" be?</i>
6. <i>Tautology:</i> The child repeats the question or part of it	<i>Child: "now" is....</i>
7. <i>Turn-taking:</i> The child uses a routine phrase to	<i>Experimenter: Why does the little ant run to the mushroom?</i>

 answer the question.

 Child: Because....

The last three strategies, *Keep silence*, *Tautology* and *Turn-taking*, are new categories that could not be found in the study of Ryder and Leinonen (2003).

Research Question 4: Effect of Age Group on These Strategies

As shown earlier, the 6- and 7-year-old children perform near ceiling, and their incorrect answer categories are therefore not analyzed. Table 5 summarizes incorrect answer categories, i.e., compensatory strategies, used by the groups aged 3, 4 and 5.

Table 5
Summary of Compensatory Strategies as a Function of Age

Compensatory strategy	3-year-olds		4-year-olds		5-year-olds	
	f	%	f	%	f	%
<i>World knowledge & experience</i>	21	39.62	16	57.14	6	40
<i>Given Information</i>	20	37.74	6	21.43	4	26.67
<i>Don't know</i>	0	0	0	0	1	6.67
<i>Irrelevant</i>	7	13.21	0	0	2	13.33
<i>Keep silence</i>	5	9.43	6	21.43	2	13.33
<i>Tautology</i>	0	0	0	0	0	0
<i>Turn-taking</i>	0	0	0	0	0	0
Total	53	100	28	100	15	100

As presented, more incorrect answers are elicited from younger children in all incorrect answer categories, and the number of incorrect answers within each category diminished with progressing age. In order to compare incorrect answer categories between the age groups, absolute frequency has been converted into relative frequency. For the three age groups, *World knowledge* and *Given information* are the most frequently used strategies, followed by the category *Keep silence*. It is also quite common to give *Irrelevant* answers for 3- and 5-year-old

children. For 5-year-old children, *Don't know* answer is also employed.

ANOVA was utilized to compute the significance of all compensatory strategies among the three groups aged 3, 4 and 5. Results display a significant effect of the three age groups of 3, 4 and 5 years on *Given information* ($p = .00$) and *World knowledge* ($p = .01$). *Irrelevant* is of not quite significant difference for the three groups ($p = .04$). Three-year-olds differ from 5-year-olds in the use of *World knowledge* ($p=.00$). For *Given information*, age group comparisons between 3- and 4-year-olds and between 3- and 5-year-olds indicate their great difference ($p=.00$ and $p=.00$, respectively). In addition, the age group of 3 years appears somewhat different from that of 4 in the use of *Irrelevant* ($p=.02$).

Discussion

The findings of this study provide support for the view of Ryder and Leinonen (2003) that question types derived from Relevance Theory can be used to examine the development of children's pragmatic comprehension. The youngest age group, 3-year-olds, have the ability to process the least complex pragmatic task (reference assignment) and are beginning to engage in the more complex question types. This finding is consistent with that of the earlier studies that young children are already able to utilize context if it does not demand complex processing and is familiar to them (e. g., Bucciarelli et al., 2003). At the same time, the results that the 4-year-olds shows the emergent pragmatic ability of processing the most demanding pragmatic question type (implicature questions) and that the children with the age of 5 onwards can deal with most of enrichment and implicature questions, reflect the pragmatic complexity of the different question types and the children's increasing ability to apply more complex contextual information to the comprehension process. An evident developmental pattern for the five age groups in correctly answering the three types of questions suggests that children have an increasing ability to use complex contextual information as they age.

In line with an earlier study among English children (Ryder &

Leinonen, 2003) a similar developmental trend is found for reference assignment, enrichment and implicature questions. The data of the present study indicate that implicature questions are developmentally most advanced, followed by enrichment, then reference assignment. That some 3-year-old children are able to answer implicature questions contrasts with the outcome of Ryder and Leinonen (2003), where all 3-year-old children were unable to answer implicature questions (in the present study they answered over 26% of these questions correctly). An explanation for this could be a different kind of memory load in the implicature questions. In this study questions were based on short scenarios, whereas in Ryder and Leinonen's study the children had to recall information given much earlier in story. It may also be that in the present study the context of the scenarios was more familiar to the children.

In this study the most significant development stage in the comprehension of contextual meanings is seen between the ages 3 and 4, while for implicature questions it continues until the age of 5. This may be associated with the development of other functions at that age, such as the development of working memory, the development of inferencing skills (Bucciarelli et al., 2003), the ability to direct attention, and the ability to understand the mind of others (Sperber & Wilson, 1995). In addition, the increases of children's new experiences and world knowledge would also directly produce an effect on their ability to derive meanings from context. Differences in children's level of experiences may be a reason for the variation found in the age groups of 3 and 4 years. Even though all the 3- and 4-year-old children in this study were in day nurseries, they had different family backgrounds and their experiences of language use in different situations may therefore not have been similar.

In this study, differences among age groups diminish as the children's age increases, and by the age of 6, it is no longer evident, so that all children aged 6 and 7 are able to utilize context in inferencing and perform near ceiling when answering all question types. Thus, in this study, the number of incorrect answer for children aged 6 and 7, respectively, was very small and only the content of 3- to 5-year-old children's incorrect answers was analyzed.

The categorization of incorrect answers shows that *World knowledge* and *Given information* answers are common to all age groups from 3 to 5 years. Common use of *World knowledge* suggests that over-generalization of own knowledge is common to all 3- to 5-year-old children. *Don't know* answer is especially used for 5-year-olds (it can also be found for 6-year-olds), which might suggest that the older children may be using the answer because they prefer this to the possibility of giving a wrong answer. *Don't know* strategy may therefore be one way of minimizing failure. Unsophisticated answer strategy *Irrelevant* almost decreases with progressing development and it's very rare in children aged 6 and 7 years. When giving an *Irrelevant* answer, the children seem to say the first thing that comes to their mind, which may suggest that young children may use a naïve optimism strategy where they suppose that the first thing that comes to their mind is what the hearer expects to hear (Sperber, 1994). In addition to answers classified as *Irrelevant*, another unsophisticated strategy in which the child appears to show no attempt at utilizing the context and does not even take his/her turn is *Keep silence*.

Keep silence, *Tautology*, and *Turn-taking* are strategies that could not be found in the study of Ryder and Leinonen (2003). This finding might possibly be explained by some cultural factors. First, Chinese educational traditions may affect the use of *Keep silence* to some degree. Since Confucian educational time, Chinese teachers have been teaching (teaching is just teaching, no more others) students and the students have just been faithfully copying and reproducing what their authorities (e.g. teachers) say and taking it as transmission (Sowden, 2005, p. 227). Very less interaction happens between teachers and students in the classroom and students typically remain silence. This is still the case widely existing in China, so it's not strange to find *Keep silence* as these children's compensatory strategy to the experimenter's questions. Second, the use of strategies *Tautology* and *Turn-taking* might be partially connected with the reasoning routine in Chinese school. For example, many Chinese schools pay attention to the cultivation of logical ability and students would always be filled with such pairs of formulaic expression as "Why? Because..." even if they have not answered that "Why" question yet. However, as the number

of their use is very small (two times in total), no generalization can be produced and more research with larger sample size is still needed.

The 5-year-olds process more advanced contextual information than the other two age-groups, i.e., rely less on *Given information* and more on less obvious contextual information (*World knowledge*), and used less unsophisticated strategies and more sophisticated strategies, albeit not appropriate. Such inappropriateness may be the consequence of children's overusing their emerging ability to perform complicated contextual operation.

Conclusion

That children exhibit a progressive ability in answering the three types of question as they age might be connected with the development of other abilities. Thus, it would be meaningful to investigate pragmatic comprehension associated with other factors like cognitive and social functions in children. It's also found that children here performed better than those in Ryder and Leinonen's (2003), especially when answering implicature questions. Different material design (scenario vs. story) might contribute to the result. Furthermore, new strategies *Keep silence*, *Tautology*, and *Turn-taking* used in the present study might possibly be explained by Chinese educational traditions. To further understand language and cultural characteristics of pragmatic comprehension development, studies on different languages and different cultures are suggested.

The present study on 3-7-year-olds makes it possible to see developmental changes during their childhood years. Regarding language teaching, this study may benefit curriculum developers of pre-school and school language programs. Texts with multiple interpretations which appeal to the readers' personal responses should form the basis of future work in language learning and materials development. Importantly, the results of this study may be an indication for language teachers to strike a balance between being implicit and explicit in their teaching. For instruction to focus on the importance of implicatures while overlooking the fundamental stage of inferencing at the level of explicatures would confuse students

rather than enlighten them. This view supports Krashen's (1982) comprehensible input+1 hypothesis that language learners only accept comprehensible input that is slightly beyond (next immediate step along) the current level of competence.

References

- Austin, J. L. (1962). *How to do things with words*. Oxford: Oxford University Press.
- Bucciarelli, M., Colle, L., & Bara, B. G. (2003). How children comprehend speech acts and communicative gestures. *Journal of Pragmatics*, 35, 207-241.
- Foster-Cohen, S. (2000). Relevance theory and language acquisition: A productive paradigm shift? *Child Language Bulletin*, 20, 5-8.
- Hoff, E. (2001). *Language development*. Belmont, CA: Wadsworth-Thomson Learning.
- Krashen, S. D. (1982). *Principles and practice in second language acquisition*. Oxford: Pergamon Press.
- Li, P., Bates, E., & MacWhinney, B. (1993). Processing a language without inflections: A reaction time study of sentence interpretation in Chinese. *Journal of Memory and Language*, 32, 169-192.
- Linlan, S. (2008). *He ma ma yi qi kan tu bian gu shi*. Guangzhou, China: New Century Press.
- Maratsos, M. P. (1973). Nonegocentric communication abilities in preschool children. *Child Development*, 44, 697-700.
- O'Neill, D. K. (1996). Two-year-old children's sensitivity to a parent's knowledge state when making request. *Child Development*, 67, 659-677.
- Ryder, N., & Leinonen, E. (2003). Use of context in question answering by 3-, 4- and 5-year-old children. *Journal of Psycholinguistic Research*, 32, 397-415.
- Searle, J. R. (1975). Indirect speech acts. In P. Cole & J. L. Morgan (Eds.), *Syntax and semantics* (pp. 59-82). San Diego, CA: Academic Press.
- Sowden, C. (2005). Plagiarism and the culture of multilingual students in higher education abroad. *ELT Journal*, 59, 226-233.

- Sperber, D. (1994). Understanding verbal understanding. In J. Khalifa (Ed.), *What is intelligence* (pp. 179-198)? Cambridge: Cambridge University Press. Retrieved from <http://sperber.club.fr/intel.htm>
- Sperber, D., & Wilson, D. (1995). *Relevance: Communication and cognition* (2nd ed.). Oxford: Blackwell.
- Strohner, H., & Nelson, K. E. (1974). The young child's development of sentence comprehension: Influence of event probability, nonverbal context, syntactic form, and strategies. *Child Development*, 45, 567-576.
- Wilson, D., & Sperber, D. (2004). Relevance theory. In G. Ward & L. Horn (Eds.), *Handbook of pragmatics* (pp. 607-632). Oxford: Blackwell.

Appendix A



Appendix B



Appendix C

**About the Author**

Lina, Tao is currently writing her dissertation paper on Relevance Theory for her Ph. D. in Applied Linguistics at De La Salle University---Manila. She earned her Master's Degree in English Language Education from the same university. She has presented a paper in international GLoCALL conference and has published articles in reputable journals like Philippine ESL Journal. Her research interests include second language teaching and writing, children's psycholinguistics, discourse analysis, and cognitive pragmatics.