# 科技部補助專題研究計畫成果報告
# 期末報告

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## 漢語親子對話中共同注意力與指涉詞選擇之關聯研究

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報 告 附 件 ： 出席國際會議研究心得報告及發表論文

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中 華 民 國 105 年 01 月 31 日

中 文 摘 要 ： 過去一些研究採用了言談語用的觀點來解釋幼童的指涉詞選擇 (Allen, 2000; Clancy, 1993; 1997; Guerriero, et al., 2006; Huang, 2011, 2012; Narasimhan, et al., 2005; Serratrice, 2005)。這些研究雖指出了一些影響幼童指涉詞選擇的語用特徵，但是這些特徵主要是關於幼童對聽話者知曉狀態的評估(Skarabela, 2007)。要更完整的瞭解幼童的指涉詞選擇，另一種重要層面的心智狀態也必須考量，也就是所謂的共同注意力。共同注意力是關於幼童對聽話者注意力狀態的評估。從兒童發展的觀點來看，能協調聽話者的注意力並達成共同注意力的狀態是兒童在社會認知發展上的一個重要里程碑(Bruner, 1983, 1995)。

本研究的目的主要有兩點。第一，本研究旨在探討共同注意力在漢語幼童指涉詞選擇中所扮演的角色。研究中將對共同注意力及 Huang (2011, 2012)中所提的語用特徵作分析，並進一步瞭解共同注意力與這些語用特徵的互動關係。研究假設為當加入共同注意力這個層面的因素之後，更能有效解釋漢語幼童指涉詞的選擇。第二，本研究同時也將探討共同注意力在母親的指涉詞選擇中所扮演的角色。根據Guerriero, et al. (2006)，幼童與母親在語言及非語言的指涉形式上通常極為相似。因此研究假設為母親輸入語中運用共同注意力的方式與幼童指涉詞選擇中運用共同注意力的方式會有直接的關聯性。

研究結果顯示說漢語的兩歲幼童在指涉詞選擇時會受到共同注意力這項因素的影響。也就是說，幼童對於指涉物是否在自己及母親的共同注意力中有敏感度，且能據此來選擇所要使用的指涉詞形式。而在與母親的語料相比較之後，發現幼童的指涉詞選擇與母親的指涉詞選擇呈現相似模式。另外，在將語料依據主詞論元及受詞論元分別分析後，發現共同注意力與指涉物的人稱有交互作用，也就是說這兩項因素的互動關係影響了幼童及母親指涉詞的選擇。本研究的結果對瞭解漢語幼童言談語用發展以及社會認知發展有所貢獻。

中文關鍵詞：指涉詞選擇、共同注意力、兒童語言習得
英 文 摘 要 ：
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# 科技部補助專題研究計畫成果報告

## （□期中進度報告/■期末報告）

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# 漢語親子對話中共同注意力與指涉詞選擇之關聯研究

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計畫主持人： 黃瓊之
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計畫參與人員：王曉婷

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中 　華 　民 　國 105　年 1　月　30　日

## 1. Background

Research in first language acquisition has shown that child language at the early stages of language acquisition is characterized by the omission of arguments. Children may omit the subject argument, the object argument or both in their utterances. Such phenomenon occurs cross-linguistically, regardless of whether the target language requires overt arguments as in English (Bloom, 1970, 1990; Hyams, 1986; Valian, 1991) and Danish (Hamann & Plunkett, 1998) or permits omitted arguments as in Chinese (Wang et al., 1992), Inuktitut (Allen, 2000), Japanese (Hirakawa, 1993), and Korean (Clancy, 1993, 1997).

Different types of explanation have been proposed to account for the phenomenon of argument omission in child language. From a grammatical perspective, it has been suggested that the child starts out with a grammar that is different from the adult's. That is, the child's early grammar permits argument ellipsis where the adult's grammar would not. Later, the child's grammar would change into one more appropriate to the adult language (Hyams, 1986, Hyams & Wexler, 1993, Radford, 1990). Another type of explanation is from a performance perspective (Bloom, 1993; Valian, 1991). The performance account assumes that the child has adult-like grammatical structures from the earliest stages of language learning but omits arguments as a result of immature or limited processing resources. That is, the child can only cope with producing utterances of limited length. Since the processing load of a sentence is assumed to be greater at the beginning of the sentence, subjects are omitted more frequently than objects. As the child's processing capacity matures, argument omission gradually declines until it largely disappears. In addition to the grammatical and performance accounts, some researchers have more recently adopted a discourse-pragmatic perspective to explain the child's referential choice; in other words, the child's referential choice may be discourse-motivated (Allen, 2000; Clancy, 1993; 1997; Guerriero, et al., 2006; Narasimhan, et al., 2005; Serratrice, 2005).

### 1.1 Discourse pragmatics and referential choice

In language acquisition research, grammar and discourse are frequently treated as separate domains that do not interact in any significant way. However, in research on adult grammar, there is a long and flourishing tradition of theoretical approaches that consider discourse pragmatics as crucial for a comprehensive understanding of how speakers use syntax in discourse (Ariel, 1990, 1996; Chafe, 1976, 1994, 1996; Givón, 1984; Halliday & Hasanm 1976; Huang, 2000; Levison, 1987, 1991). In this use-oriented perspective the choices speakers make are the end results of the

interaction of syntactic and pragmatic principles and can only be understood by resorting to an integrated mode of explanation that draws simultaneously on both levels (Serratrice, 2005). This has important implications for the study of language development, suggesting that the acquisition of grammar may be related to the referential strategies used by adults in conversations with young children (Clancy, 1997).

It has been shown that referential strategies constitute a key link between grammar and discourse in adult language. Research indicates that adult speakers show sensitivity to discourse-pragmatic factors presumed to underlie the differential use of referring expressions in discourse (Chafe, 1994; Du Bois, 1985, 1987; Givón, 1983; Gundel, et al. 1993; Kumpf, 1992). It has been suggested that informative arguments (i.e., arguments whose referents are not highly salient and accessible) are more likely to be realized overtly than uninformative arguments (i.e., arguments with highly salient and accessible referents) (Greenfield & Smith, 1976). For example, arguments with newly introduced referents, which are considered to be informative arguments, are more likely to be realized overtly than arguments with previously established referents, which are considered to be uninformative arguments. Chafe (1994) noted that during the unfolding of discourse, the accessibility of a given referent would change as a function of the level of activation state. He suggested that the choice of referring expressions is associated with three levels of activation states: active, semiactive, and inactive.[1] Referents with different levels of activation states are associated with different referential forms. Active referents are associated with high accessibility markers such as zero forms or unaccented pronominal forms. Semiactive or inactive referents are associated with relatively lower accessibility markers such as full noun phrases or proper names. The relationship between discourse and grammar was further explicated in Du Bois (1985, 1987). Du Bois formulated the 'Preferred Argument Structure' (PAS), which suggests that each clause contains no more than one lexical argument (the 'one lexical argument constraint'); that the lexical argument does not appear in the A role[2] (the 'non-lexical A constraint'); that each clause contains no more than one argument carrying new information (the 'one new argument constraint'); that new information is introduced into discourse through the non-A role, i.e., O or S, and that the A role typically carries old information (the 'given A constraint'). Gundel, et al. (1993) proposed a Givenness Hierarchy to explicate the relationships between cognitive statuses and the choice of referring

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[1]  An active referent is one that is salient in the hearer's consciousness at a particular moment in time, something that is the focus of interest. A semiactive referent is one that is in the hearer's peripheral consciousness; it is part of the background knowledge, but is not currently the focus of attention. An inactive referent is neither introduced linguistically nor is physically present.
[2]  The A role refers to the subject of a transitive verb; the O role refers to the object of a transitive verb, and the S role refers to the subject of an intransitive verb.

expressions in natural language discourse. This hierarchy consists of six cognitive statuses; from higher to lower, they are 'in focus', 'activated', 'familiar', 'uniquely identifiable', 'referential', and 'type identifiable'. The statuses are implicationally related, such that each status entails all lower statuses, but not vice versa. Each of the statuses is a necessary and sufficient condition for the use of one or more different forms. Similarly, Givón (1983) proposed an implicational hierarchy to explicate the correlation between the degree of continuity/accessibility of topic NPs and the marking devices. The scale ranges from zero anaphora as the most continuous/accessible topic to referential indefinite NPs as the most discontinuous/inaccessible topic. As seen above, the speaker's referential choice reflects the speaker's assumptions of the informative status of a given referent in the listener's mind. The correlation found between informativeness and argument realization reflects the speaker's attempt to be as explicit as possible for the listener to identify the referent in an unambiguous way.

**1.2 Discourse-pragmatic approach to children's referential choice**

Given the success of the discourse-pragmatic approach in explaining the choice of referring expressions in adult language, studies have been conducted to investigate the adaptability of this approach to children's referential choice (Allen, 2000; Clancy, 1993; 1997; Guerriero, et al., 2006; Narasimhan, et al., 2005; Serratrice, 2005). A similar correlation between informativeness and argument realization has been observed in child language cross-linguistically in English (Greenfield and Smith, 1976; Guerriero, et al., 2006), Italian (Serratrice, 2005), Spanish (Paradis & Navarro, 2003), Korean (Clancy, 1993), Inuktitut (Allen, 2000), and Mandarin (Huang, 2011).

In Greenfield and Smith's (1976) seminal study, English-speaking children at the one-word stage tended to encode those aspects of event that were most informative (i.e., new information) and left unexpressed those elements that were presupposed (i.e., given information). In addition to newness, Clancy (1997) also included the features of query, contrast, and absence in her analysis of referential choice in Korean acquisition. Clancy (1997) analyzed referential choice in Korean acquisition, focusing on the impact of discourse variables on referential choice in children's conversations with caregivers. The data consisted of longitudinal records from two Korean-speaking girls (aged 1;8 and 1;10 at the start). Referential forms were coded as 1) ellipsis, 2) pronouns, and 3) lexical noun phrases. Discourse variables included 1) query, 2) contrast, 3) absence, and 4) prior mention. The results showed the relationship between referential forms and the four discourse variables. Noun phrases were the preferred form for answering wh-questions and for mentioning absent referents.

Pronouns and nouns were both common choices for contrasting referents. Although some individual differences were apparent in the treatment of new and accessible referents, ellipsis was the favorite choice for given and accessible referents and explicit nominal reference was used by both children for introducing new referents.

Allen (2000) also assessed discourse pragmatics as a potential explanation for the production and omission of arguments in child Inuktitut. Allen (2000) analyzed referential choice over a nine month period in four children (aged 2;0, 2;6, 2;10 and 2;6 at the start) acquiring Inuktitut, a null argument language. The study tested the hypothesis that children are highly sensitive to the dynamics of information flow in discourse, and that they structure their conversation in order to reduce the potential uncertainty of the listener regarding the referents that they are talking about. Eight features of informativeness were included for analysis: absence, newness, query, contrast, differentiation in context, differentiation in discourse, inanimacy, and third person. The results indicated that the Inuit children paid attention to discourse pragmatics in choosing whether to represent an argument as overt or null; increasing the informativenss value of a referent increased the likelihood of using an overt argument form.

Similarly, Serratrice (2005) conducted a longitudinal study investigated the distribution of null and overt subjects in the spontaneous production of six Italian-speaking children between the ages of 1 years, 7 months and 3 years, 3 months. All of the referential subject arguments were coded for overtness and for morphosyntactic form: noun phrase, bare noun phrase, proper name, personal pronoun, demonstrative pronoun, indefinite pronoun, and quantifier. Each argument was further coded for the following informativeness features: person, activiaton, and disambiguation. Each feature was rated as being either informative or uninformative. The aim was to use the informativeness features to predict argument realization, the prediction being that referents associated with informative features would be more likely to be realized overtly than referents associated with uninformative features. The results revealed that overt subjects were more likely than null subjects to represent third person, new, or ambiguous referents. In addition, it was shown that increasing sensitivity to the informational value of referents as a function of language development. The results also demonstrated that neither a syntactic approach nor a performance deficit account can offer a satisfactory explanation for the selective omission of subjects.

However, the findings obtained from Guerriero, et al. (2006) called into question of the assumption that children demonstrated sensitivity to discourse-pragmatic strategies at early stages of language development. Guerriero et al.(2006) investigated whether English-speaking and Japanese-speaking children's referential choices were

motivated by pragmatic features of discourse referents across different developmental stages. Two studies were included. Study I analyzed the relationship between the argument form (null, pronominal, or lexical) and the referential status (given or new) of verb arguments in the children's and their mothers' language when the children were at 1;9 and 3;0. In Study II, non-linguistic correlates were analyzed in addition to the form and referential status of arguments at each of four linguistic periods between MLU 1.00 and 4.00 in two English-speaking and two Japanese-speaking children and their mothers. The results showed that the young English-speaking and Japanese-speaking children's referential choices were not made in accordance with discourse-pragmatic principles early on. While the English-speaking children showed mastery of discourse-pragmatic strategies at some point between 2;0 and 2;7, the Japanese-speaking children's referential choices seemed to be inconsistent with discourse-pragmatic principles even as late as 3;0. The results thus were somewhat different from those reported in Clancy (1993, 1997), Allen (2000), Narasimhan, et al. (2005) and Serratrice (2005).

**1.3 Discourse-pragmatic approach to caregivers' referential choice**

Children are exposed to child-directed speech, not adult conversation. An adequate understanding of children's experience of language requires systematic empirical investigations of the referential strategies used by adults in conversation with young children. Among the few studies touching upon referential choice in child-directed speech are Clancy (1993), Guerriero, et al. (2006), Huang (2012), Narasimhan, et al. (2005), and Paradis and Navarro (2003). These studies have reported the importance of language input on children's referential strategies.

As seen above, Guerriero, et al. (2006) investigated English-speaking and Japanese-speaking children's referential choice. In addition to the analysis of the child data, this study also examined the mothers' referential choice. The results showed that the children and their mothers often demonstrated a close similarity in their linguistic as well as non-linguistic referential patterns. The children who were exposed to consistent discourse-pragmatic referential patterns in their input tended to show these patterns earlier than those exposed to inconsistent patterns. The findings suggested that both the referential status of discourse referents and maternal input can be used to predict children's referential choices across typologically different languages.

Paradis and Navarro (2003) studied subject realization in Spanish in a bilingual acquisition context by examining subject realization in the speech of a Spanish-English bilingual child (age 1;9-2;6) and two Spanish monolingual children (ages: 1;8-2;7 and 1;8-1;11). The study attempted to determine whether there was

cross-linguistic interference and whether the source of the interference was due to child-internal cross-language contact or due to the nature of the language input. The results showed that the bilingual child produced more overt subjects than the monolingual children, and that the bilingual child's parents also used overt subjects more frequently than the monolinguals' parents. It was suggested that while the patterns of subject realization observed in the bilingual child's speech may be interpreted as due to cross-linguistic effects from English, the parental input may also have exerted an important influence.

Narasimhan, et al. (2005) examined argument realization in Hindi caregiver-child discourse. Since argument omission is pervasive in adult Hindi, a question addressed in this study is whether this characteristic of argument omission can also be found in the input from Hindi-speaking caregivers. If so, a further question is whether or not children consequently make errors in verb transitivity. The results showed that caregivers' input to 3-4 year-olds exhibits massive argument ellipsis. However, children acquiring Hindi do not make transitivity errors in their own speech; nor do they omit arguments randomly. It was suggested that children acquiring Hindi rely on multiple cues to discover language structure, including syntactic cues in the input, verb morphology and nonlinguistic contexts of use.

## 1.4 The role of joint attention in referential choice

As seen above, previous studies have identified several discourse-pragmatic features that influence children's referential choice. However, these features are mainly related to the child's evaluation of the listener's knowledge states (Skarabela, 2007). It has been suggested that to have a more complete picture of the child's referential choice, another important dimension of mental state should also be taken into consideration. That is, joint attention. Joint attention entails the child's evaluation of the listener's attentional states. From a developmental point of view, the ability to coordinate the listener's attention and to engage in joint attention marks an important milestone in the child's socio-cognitive development (Bruner, 1983, 1995).

Joint attention refers to a social activity wherein the child and the caregiver are both focused on the same referent while aware of each other's attention (Tomasello, 1999). It is a triadic interaction involving two interlocutors and a referent. It is in contrast to a simply dyadic interaction, in which young infants either interact with an adult, ignoring everything in the surrounding situation, or focus their attention on a particular object, ignoring other people. Children's ability to engage in joint attention emerges only gradually between 9 and 12 months of age. The transition from dyadic to triadic interactions is reflected in the emergence of joint-attentional behaviors, such

as eye gaze and pointing (Eilan, 2005). It has been shown that joint attention provides a foundation for the development of communication, social cognition, and language (Diessel, 2006; Tomosell & Farrar, 1986). In particular, it has been demonstrated that joint attention plays an important role in children's understanding of intentions and in their early vocabulary acquisition (Bruner, 1983, 1995; Carpenter et al., 1998; Clark, 2001; Tomasello, 2001, 2003).

Recently it has been suggested that joint attention may also play an important role in the child's referential choice, an area where the child's socio-cognitive understanding of the listener's perspective is crucial for successful communication. Skarabela (2007) investigated the relationship between joint attention and argument realization in child Inukitut. Joint attention was analyzed as an accessibility feature; that is, it is a feature a speaker uses to evaluate whether a particular referent is conceptually accessible to the listener. The data consisted of longitudinal spontaneous speech of four children acquiring Inuktitut (2;0-3;6). It was hypothesized that the children's involvement in joint attention influences their choice of referential forms. The results showed that the children were more likely to omit arguments or to use demonstratives when involved in joint attention and that they tended to use lexical forms when joint attention was absent. It was suggested that argument realization in early language offers an insight into children's ability to consider their interlocutor's perspectives. In Skarabela, et al. (2013), it was further shown that joint attention helps explain why children use omitted forms or demonstratives, as opposed to lexical forms, when introducing new referents. Children's use of light forms for new referent introductions should not be explained as reflecting pragmatic deficiency, as some have claimed (Schaeffer, 2000). On the contrary, it may reveal children's sensitivity to the joint-attentional focus of the interlocutor and the accessibility of the referent.

The establishment of joint attention often involves gestures, such as pointing at an object or raising an object in the air. So, et al. (2010) studied whether children use gestures in a way that are sensitive to two discourse-pragmatic features (person and information status). The participants were six Chinese-speaking children (ranging in age from 3;7 to 5;2) and six English-speaking children (ranging in age from 2;10 to 4;11). It was found that when the children used underspecified forms (i.e., null arguments and pronouns, as opposed to nouns) to refer to referents that needed to be specified (i.e., third-person new referents), they tended to produce gestures along with these nonnouns. In other words, both of the Chinese- and English-speaking children were sensitive to the need to use gestures (i.e., the need to establish joint attention) in clarifying potentially ambiguous referring expressions.

A slightly different picture was reported by Guerriero, et al. (2006). Guerriero, et al. investigated whether English-speaking and Japanese-speaking children's

referential choices were motivated by pragmatic features of discourse referents across different developmental stages. Both linguistic and non-linguistic referential behaviors were considered. The non-linguistic referential behaviors analyzed included pointing, touching, reaching, moving, making a head motion, or purposeful gaze direction toward a referent. In other words, these were behaviors used by the speaker for managing joint attention. One of the hypotheses of the study was that a non-linguistic pragmatic strategy will be used when a non-lexical form is used in reference to new information. That is, the speaker will use joint-attentional behaviors to supplement non-lexical references to new information. The hypothesis was supported with respect to the English-speaking children and mothers. However, the non-linguistic strategies used by the Japanese-speaking children and mother were found to be more variable than those used by the English speakers. In other words, null and pronominal arguments in reference to new information were not consistently supplemented with non-linguistic information in the speech of Japanese-speaking children and mothers. It was suggested that the informative status of referents as well as parental input are both necessary to explain the argument forms used by children learning typologically different languages.

## 1.5 Huang (2011, 2012): my previous studies

Huang (2011), one of my previous studies, adopted a discourse-pragmatic approach to investigate the referential choice of children acquiring Mandarin Chinese, a language permitting omitted arguments. The data consisted of two Mandarin-speaking children's natural conversation with their mothers, collected when the children were between the ages of 2;2 and 3;1. The subject and object arguments of the children's utterances were coded for the categories of referential forms and informativeness features. The referential forms included three categories: 1) null forms, 2) pronominal forms, and 3) nominal forms. The informativeness features included eight categories: 1) absence, 2) newness, 3) query, 4) contrast, 5) differentiation in context, 6) differentiation in discourse, 7) inanimacy, and 8) third person. The results showed that referents associated with informative values (e.g, new) were more likely to be realized overtly than referents associated with uninformative values (e.g., given). The children appeared to use discourse-pragmatic information in deciding their referential choice; they were sensitive to the dynamics of information flow in discourse, and structured their conversation in order to reduce the potential uncertainty of the listener regarding the referents that they were talking about. Such sensitivity was observed since the children were as young as 2;2 and throughout their development. However, while both children were sensitive to informativeness, it was

observed that the referential strategies used by the two children were slightly different. One of the children tended to use nominal forms to refer to referents with informative values, and null forms or pronominal forms for referents with uninformative values. The other child, however, also relied on pronominal forms in conjunction with deictic gestures or eye gaze to represent referents with informative values.

While Huang (2011) investigated Mandarin-speaking children's referential choice, Huang (2012) focused on the mothers'. The purpose of Huang (2012) was to investigate the referential choice of Mandarin-speaking mothers in order to determine the extent to which pragmatically-sensitive referential strategies are indeed a characteristic of the input given to children acquiring Mandarin. In addition, analysis was conducted to compare the mothers' referential choice and the children's referential choice in order to obtain a more complete picture of how mothers' child-directed speech may be related to children's referential choice. The data and the analytical framework used in this study were similar to those used in Huang (2011). The results showed that the mothers' referential choice was highly influenced by the eight informativeness features, and that the mothers revealed very similar patterns of referential choice as their children. However, differences between the mothers' and the children's' referential patterns were also observed. For example, the children used null forms significantly more frequently than the mothers to represent uninformative arguments; in addition, the mothers used much higher percentages of pronominal forms than the children for arguments with queried referents. It appears that these differences are related to the particular nature of maternal speech and child speech in mother-child interaction.

## 1.6 The purpose of the present study

My earlier works Huang (2011, 2012) have demonstrated that Mandarin-speaking children and mothers follow discourse-pragmatic principles in their referential choices. That is, they are more likely to use nominal forms to refer to referents with informative values, and null forms or pronominal forms for referents with uninformative values. However, two noteworthy characteristics of the data are observed. First, in a number of cases children do use null forms or pronominal forms, instead of nominal forms, for referents with informative values. Second, there are individual differences in such uses in children's referential systems. A preliminary observation of the data leads to the speculation that the factor of joint attention may be a potential explanation for the observed phenomenon. Thus a more systematic and in-depth analysis involving the factor of joint attention is needed in order to have a clearer picture of Mandarin-speaking children's referential system.

This study thus attempts to address the issue mentioned above in order to further the research of children's acquisition of referential expressions. The aim of this study is twofold. First, this study attempts to examine the role of joint attention in the Mandarin-speaking children's referential choice It is hypothesized that Mandarin-speaking children's referential choices are influenced by the factor of joint attention: Null forms or pronominal forms tend to be with the occurrence of joint attention while nominal forms tend to be used with the lack of joint attention. Second, this study also attempts to examine the role of joint attention in the mothers' referential choice. As reported by Guerriero, et al. (2006), children and their mothers often demonstrate a close similarity in their linguistic as well as non-linguistic referential patterns. It is hypothesized that how joint attention is managed in maternal input may be associated with how children use joint attention in their referential systems.

## 2.    Methods

### 2.1. Participants and Data Collection

The participants of this study were two Mandarin-speaking 2-year-olds and their mothers, who lived in the northern part of Taiwan. Both children's parents had received post-graduate education. The data analyzed in this report consisted of four hours of natural mother-child conversation video-recorded in the children's homes, with two one-hour sessions with each child. The collected data were transcribed using CHAT convention (MacWhinney, 2000).

### 2.2. Coding Scheme and Data Analysis

Both the children's and the mothers' speech were analyzed. All of the subject arguments and the object arguments were coded for the categories of referential forms, joint attention, and pragmatic features. The coding scheme was as follows:
1.    Speakers: Both of the speakers in each dyad are investigated.
    (a)    The child
    (b)    The mother
2.    Referential forms: Referential forms are analyzed according to a three-way classification system.
    (a)    Ellipsis
    (b)    Pronominal form
    (c)    Lexical form

3. Joint attention: Joint attention is defined as a triadic social activity where the child and the mother are both focused on the same referent, while aware of each other's attention (Tomasello, 1999). Indicators of joint attention include eye gaze, body direction, head direction, and gesture (e.g., pointing).
   (a) With joint attention
   (b) Without joint attention
4. Argument role: Referential forms are analyzed according to whether the forms occur in the subject position or in the object position.
   (a) Subject argument
   (b) Object argument

The referential forms used by the children and the mothers were analyzed in relation to the factor of joint attention, and in relation to argument roles. In addition, the referential patterns observed in both the children's and the mothers' speech was further analyzed for comparison.

## 3. Results

Table 1 shows the numbers of subject, object, and total arguments in the children's speech and the mothers' speech. As seen in the table, the numbers of the total arguments were 1661 and 6240 in the child data and in mother data, respectively.

Table 1. Numbers of subject, object, and total arguments in child data and mother data

|         | Child data | Mother data |
|---------|------------|-------------|
| Subject | 1182       | 4454        |
| Object  | 479        | 1786        |
| Total   | 1661       | 6240        |

Figure 1 presents the distributions of total referential forms used in the data in two conditions: In one condition the referents were mentioned with joint attention of the child and the mother (+JA); in the other condition, the referents were mentioned without joint attention of the child and the mother (-JA). As seen in the figure, the children used more null/pronominal forms than nominal forms in both conditions (77.35% vs. 22.65% in +JA, and 77.45% vs. 22.55% in –JA). Statistical analyses showed that the distributions of referential forms in the two conditions did not differ significantly ($\chi^2(1) = 0.002$, *n.s.*).
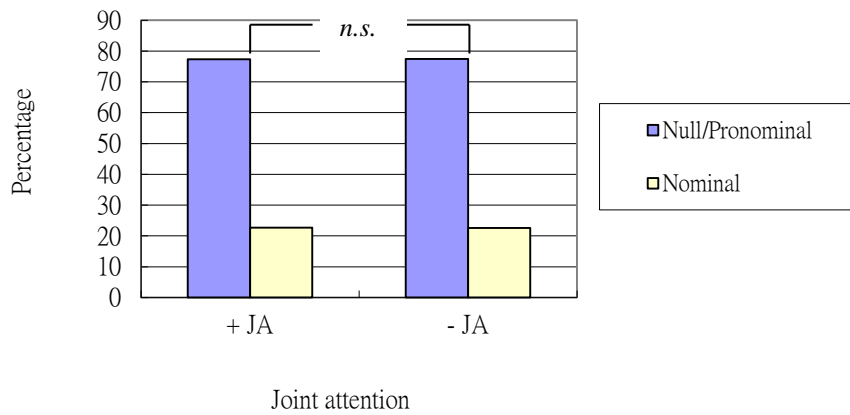
Figure 1. Referential forms in conditions with/without joint attention in child speech

Figure 2 presents the distributions of referential forms in conditions with or without joint attention in maternal speech. As seen in the figure, the mothers also used more null/pronominal forms than nominal forms in both conditions (66.96% vs. 33.04% in +JA, and 72.50% vs. 27.50% in –JA). Statistical analyses showed that the distributions of referential forms in the two conditions were significantly different ( $\chi^2 (1) = 16.781, p<.001***$ ). In other words, the mothers tended to use more nominal forms in the +JA condition than in the –JA condition, and they tended to use more null/pronominal forms in the –JA condition than in the +JA condition.
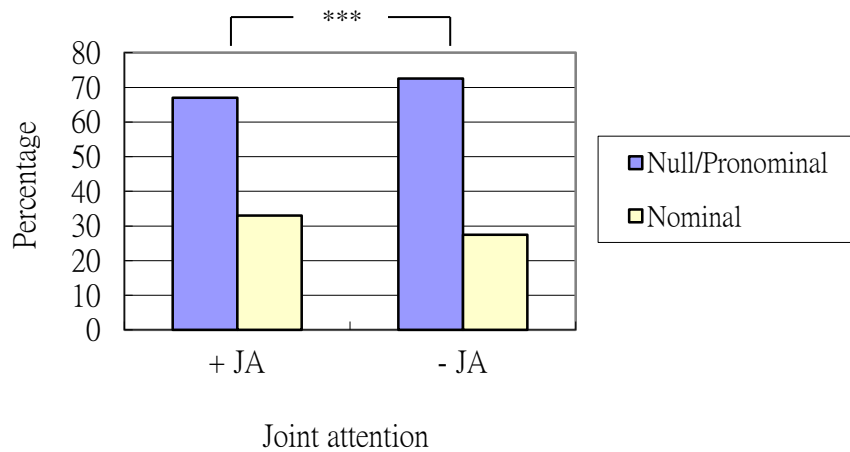


Figure 2. Referential forms in conditions with/without joint attention in maternal speech

The above results appear to indicate that the factor of joint attention influenced the mothers' use of referential forms, but that it did not influence the children's use of referential forms. However, when taking into account the syntactic positions where

these referential forms appeared, a different picture was revealed.

Figure 3 presents the distributions of referential forms in subject positions in +JA and –JA conditions in child speech. Figure 4, on the other hand, shows the distributions in maternal speech. As seen in Figure 3, the children used more null/pronominal forms than nominal forms in subject positions in both conditions (80.25% vs. 19.75% in +JA, and 89.22% vs. 10.78% in –JA). Statistical analyses showed that the distributions of referential forms in the two conditions were significantly different ($\chi^2(1) = 16.368$, *p<.001\*\*\**). In other words, the children tended to use more nominal forms in the +JA condition than in the –JA condition, and they tended to use more null/pronominal forms in the –JA condition than in the +JA condition.
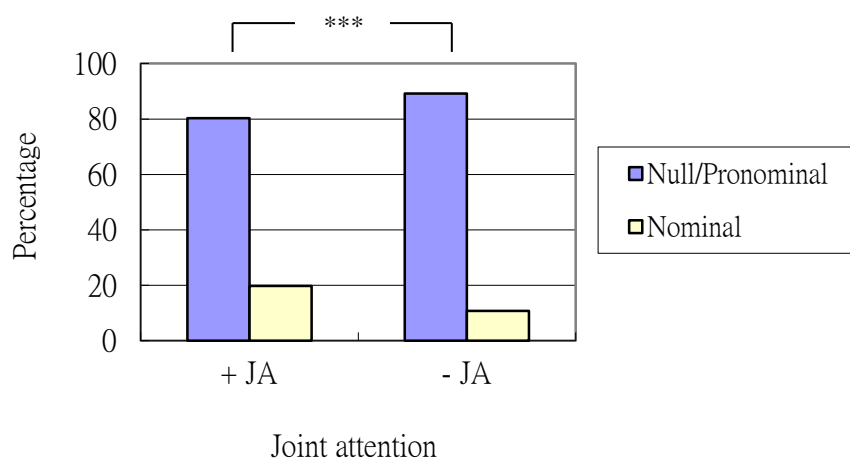


Figure 3. Referential forms in subject positions in conditions with/without joint attention in child speech

Figure 4 presents similar patterns. As seen in Figure 4, the mothers used more null/pronominal forms than nominal forms in subject positions in both conditions (70.09% vs. 29.91% in +JA, and 82.27% vs. 17.73% in –JA). Statistical analyses showed that the distributions of referential forms in the two conditions were significantly different ($\chi^2(1) = 68.994$, *p<.001\*\*\**). In other words, the mothers tended to use more nominal forms in the +JA condition than in the –JA condition, and they tended to use more null/pronominal forms in the –JA condition than in the +JA condition.
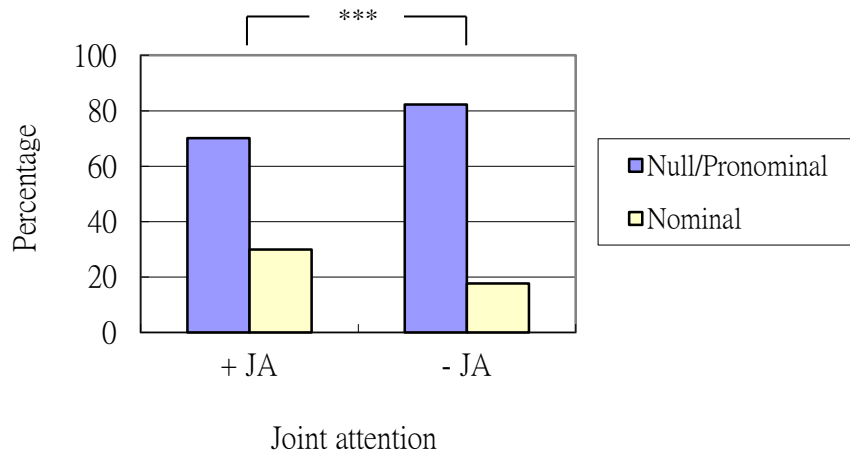
14

Figure 4. Referential forms in subject positions in conditions with/without joint attention in maternal speech

As for the object positions, the results are shown in Figure 5 and Figure 6 below. Figure 5 demonstrates the distributions of referential forms in object positions in +JA and –JA conditions in child speech. Figure 6, on the other hand, shows the distributions in maternal speech. As seen in Figure 5, the children used more null/pronominal forms than nominal forms in object positions in the +JA condition (71.14% vs. 28.86%). However, an opposite distribution pattern was observed in the –JA condition; the children used more nominal forms than null/pronominal forms in object positions in the –JA condition (46.67% vs. 53.33%). Statistical analyses showed that the distributions of referential forms in the two conditions were significantly different ($\chi^2(1) = 24.776$, $p<.001***$). In other words, the children tended to use more null/pronominal forms in the +JA condition than in the –JA condition, and they tended to use more nominal forms in the –JA condition than in the +JA condition.
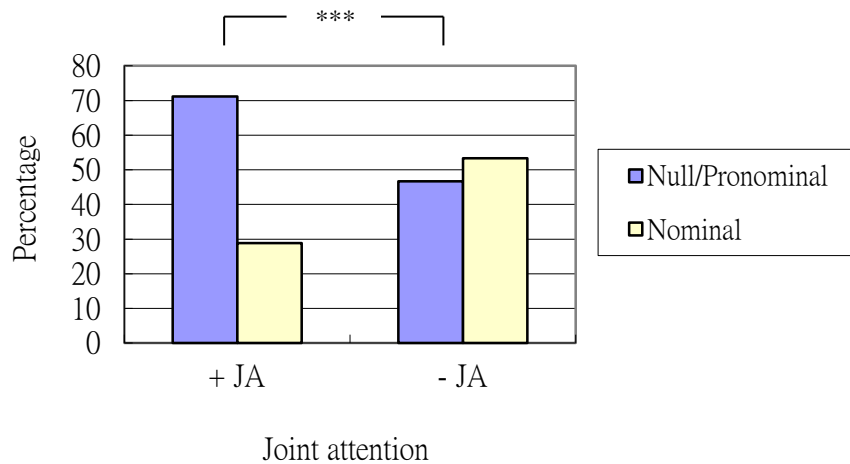
Figure 5. Referential forms in object positions in conditions with/without joint attention in child speech

Figure 6 presents similar patterns. As seen in Figure 6, the mothers used more null/pronominal forms than nominal forms in object positions in the +JA condition (60.96% vs. 39.04%). However, an opposite distribution pattern was observed in the –JA condition; the mothers used more nominal forms than null/pronominal forms in object positions in the –JA condition (45.95% vs. 54.05%). Statistical analyses showed that the distributions of referential forms in the two conditions were significantly different ($\chi^2(1) = 32.507$, $p<.001***$). In other words, the mothers tended to use more null/pronominal forms in the +JA condition than in the –JA condition, and they tended to use more nominal forms in the –JA condition than in the +JA condition.
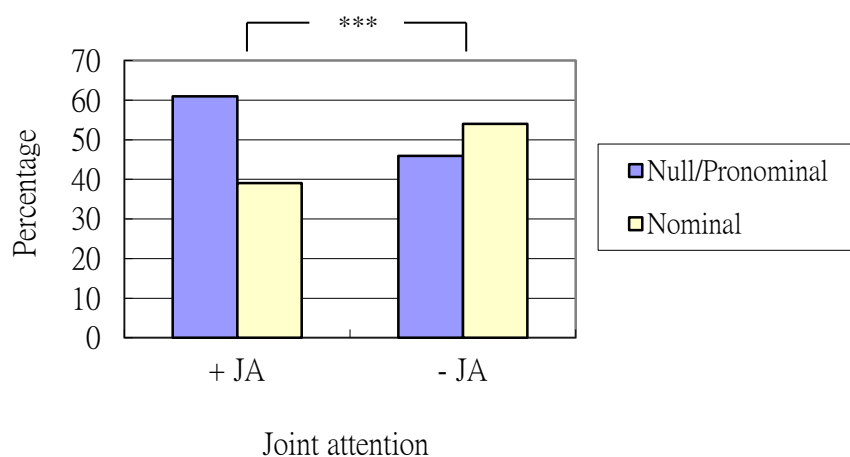


Figure 6. Referential forms in object positions in conditions with/without joint attention in maternal speech

As seen above, when taking into account syntactic positions, the distribution patterns in subject positions were similar in child speech and in maternal speech; the distribution patterns in object positions were also similar in child speech and in maternal speech. In addition, the results also showed that the factor of joint attention significantly influenced both the children and the mothers in their use of referential forms in subject positions and in object positions.

Interestingly, however, the factor of joint attention appears to influence the distributions of referential forms differently in subject position and in object positions. The patterns observed in object positions were consistent with our expectation; that is, informative forms (i.e., nominal forms) were more likely to be used in the condition

when the factor of joint attention is inaccessible (i.e., without joint attention) than in the condition when the factor is accessible (i.e., with joint attention). The patterns observed in subject positions, however, showed the opposite tendency: null/pronominal forms were more likely to be used in the –JA condition than in the +JA condition.

Further analyses were conducted to examine more closely the children's and the mothers' use of referential forms in subject positions. It was found that the high frequency of null/pronominal forms in the –JA condition may be due to the reason that most of these null/pronominal forms were used by the children and the mothers to refer to themselves or their addressees. In other words, these forms were used mainly to refer to 1st or 2nd person referents, rather than referring to 3rd person referents, as seen in the examples below.

Example 1

*MOT:　啊　你　要　看　什麼　書?
　　　　a　ni　yao　kan　sheme　shu
　　　　PRT you　want　read　what　book
　　　　'Oh what (kind of) books do you want to read?'
*CHI:　看　巧虎　的　書.
　　　　kan　qiaohu　de　shu
　　　　read　Qiaohu　DE　book
　　　　'(I want to) read the book about Qiaohu.'
*MOT:　看　巧虎　的　書　喔.
　　　　kan　qiaohu　de　shu　o
　　　　read　Qiaohu　DE　book　PRT
　　　　'(You want to) read the book about Qiaohu?'
*MOT:　看　哪　一　本?
　　　　kan　na　yi　ben
　　　　read which one　CL
　　　　'Which one do (you want to) read?'
*CHI:　看　# <這> [>] +...
　　　　kan　zhe
　　　　read　this
　　　　'(I want to) read this…'
*MOT:　<你　有　那> [<]麼　多　書.
　　　　ni　you　name　duo　shu
　　　　you　have　so　many　book

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'You have so many books,'

*MOT: 為什麼　　都　　　要　　看　巧虎　　的　書?
weisheme　　dou　　yao　　kan　qiaohu　　de　shu
why　　　　always　want　read　Qiaohu　DE　book
'Why do you always want to read the book about Qiaohu?'

*MOT: 你　要不要　　看　　其他　書?
ni　yaobuyao　read　qita　shu
you　A-not-A　read　other　book
'Would you like to read other books?'

*MOT: /ha/?
ha
'Huh?'

*CHI: 要　　看　　<這　個> [>].
yao　kan　　zhe　ge
want read this CL
'(I) want to read this.'


Example 2

*MOT: 那　　我　　要　　走　　囉 #　掰掰 [= closed the door]!
na　　wo　　yao　zou　luo　　baibai
then　I　　want　leave　PRT　byebye
'Then I'm leaving. Bye bye.'

*MOT: 我　幫　　你們　　　關　門　　　囉.
wo　bang　nimen　　guan men　　luo
I　help　you-PL　close door　PRT
'I'll help you close the door.

*MOT: 你們　　就　在　　　裡面　　不要　　出來　　喔.
nimen　jiu　zai　　limian　buyao　chulai　o
you-PL　JIU PREP　inside　not　　out　　PRT
You stay inside; don't come out.'

*CHI: 好 #　你　不要　　鎖　喔 #　不要　　鎖　喔!
hao　ni　buyao　suo　o　　buyao　suo oh
okay　you　not　lock　PRT　not　　lock PRT
'Okay. Don't you lock the door. Don't lock (it).'

*MOT: 我　不要　　鎖　啊.
wo　buyao　suo　a
I　not　　lock　PRT

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‘I won’t lock (the door).’

*MOT: 你　　出來　　　　啊 # 　出來　　　跟　　　叔叔　　玩　　啊!
ni　　chulai　　　　a　　　chulai　　gen　　shushu　wan　a
you　come out　　PRT　　come out　with　uncle　　play　PRT
‘You come out. (You) come out and play with Uncle.’

*MOT: 快點!
kuaidian
hurry up
‘Hurry up!’

*CHI: 我們　　要　　　在　　裡面 # 看看　　　蜘蛛絲
women　yao　　　zai　　limian　kankan　zhizhusi
we　　　want　　PERP　inside　see　　　spider silk

有沒有　　　　在　　　裡面　　啊.
youmeiyou　　zai　　　limian　a
A-not-A　　　PERP　　inside　PRT
‘We want to stay inside and see (if there is) any spider silk here.’

## 4. Discussion

The results of the study showed that similar distribution patterns of referential forms were observed in the speech of Mandarin-speaking children and mothers. The factor of joint attention influenced both the children’s and the mothers’ referential choices. In other words, the young children appear to be sensitive to the accessibility of joint attention in determining their use of referential forms.

However, the results also demonstrated that the distribution patterns observed in the subject positions and the object positions were different. While the patterns in the subject positions appear to be inconsistent with our expectation, further analysis revealed that the patterns may result from the interplay between different accessibility factors, in particular the interplay between Joint attention and Person of referent. It has been shown that subject arguments are more likely than object arguments to accommodate 1st and 2nd person referents in Mandarin (Huang, 2011). While 1st and 2nd person referents are considered to be inaccessible in the factor of Joint attention, they are accessible in the factor of Person (Allen, 2000). Since these 1st and 2nd person referents in the data were mentioned mainly with null/pronominal forms, these referents appear to be treated as cognitive accessible. From the results, we may speculate that these two factors had different weights in influencing the children’s and the mothers’ referential choices. The distribution pattern observed in the subject

positions appear to indicate that the factor of Person had a stronger influence than the factor of Joint attention on the children's and the mothers' referential choices.

The results of this study are consistent with the results reported in Allen et al. (2015) and Hughes and Allen (2015). As noted by Allen et al. (2015), discourse-pragmatic features may interact with each other, and children may attend to the effect of this interaction. As further pointed out by Hughes and Allen (2015), it is more likely the case that each factor does not contribute equally in determining children's referential choice. Certain factors may be stronger than other factors in predicting particular outcomes. Therefore, to better understand the role of cognitive accessibility in children's referential choice, we need more systematic investigations in further research in order to have a more complete picture of how different discourse-pragmatic factors interact with each other and whether children are sensitive to this interaction.

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# 科技部補助專題研究計畫出席國際學術會議心得報告

<div align="right">日期： 104 年 8 月 11 日</div>

| 計畫編號 | MOST 103-2410-H-004 -130 | | |
|---|---|---|---|
| 計畫名稱 | 漢語親子對話中共同注意力與指涉詞選擇之關聯研究 | | |
| 出國人員<br>姓名 | 黃瓊之 | 服務機構及<br>職稱 | 國立政治大學語言學<br>研究所 教授 |
| 會議時間 | 104 年 7 月 26 至<br>104 年 7 月 31 日 | 會議地點 | 比利時安特衛普大學<br>(University of Antwerp,<br>Belgium) |
| 會議名稱 | (中文)第 14 屆國際語用學研討會<br>(英文) The 14th International Pragmatics Conference | | |
| 發表題目 | (中文) 訊息分布及論元結構：漢語兒童言語、照護者言語、及成人言語分析<br>(英文) Information distribution and argument structures: An analysis of Mandarin child speech, caregiver speech, and adult speech | | |

　　本人於 104 年 7 月 26 日至 7 月 31 日參加第 14 屆國際語用學研討會(The 14th International Pragmatics Conference)，此次研討會由比利時安特衛普大學(University of Antwerp, Belgium)主辦。研討會集合了許多來自世界各地研究語用學的學者，會中也有其他來自台灣的教授及學生。與會學者從語用學的各個面向，作研究的分享與交流。六天的研討會，讓參與研討會的成員享受了一次豐富的學術饗宴。

　　本次研討會議程的安排精彩而豐富。六天的議程包含了特邀演講、專題論文發表、海報發表、及餐會。讓與會者有很多討論及交流機會。

　　大會安排了八場特邀演講，由八位知名學者主講。包括了 Walter Daelemans, Gabriele Diewald, Jurgen Jaspers, Stephen Levinson, Salikoko Mufwene, Kiki Nikiforidou, Gunter Senft 及 Tanya Stivers。八位學者在語用學研究領域都有重要的貢獻，他們的精彩演講讓與會者收穫豐富。Stephen Levinson 的演講探討語輪轉換、Gabriele Diewald 的演講討論語法與語境的關係、Gunter Senft 縱觀了 30 年來在巴布亞紐幾內亞的特羅布里恩群島所作的人類語言學田野研究、Jurgen

Jaspers 探討比利時的語言政策、Tanya Stivers 發表會話分析的研究主題，而 Kiki Nikiforidou 則以發表有關構式語法的研究。

　　議程中安排了平行場次的專題論文發表，每場皆有數位學者發表相關議題的論文。其中一場的主題為 Interpersonal pragmatics of social interaction in Chinese。此場次各篇論文從不同角度探討漢語的語用議題。另一場次主題為 Pragma-discourse: From utterance to discourse interpretation and production，此場次的論文發表頗為精彩，讓我獲益匪淺。另外，由 Minyao Huang 及 Kasia Jaszczolt 所規劃的場次 The dynamics of self-expression across languages 則與我的研究方向有關，此場次的論文包含不同語言的研究，提供了跨語言的研究成果。除此之外，一些論文探討了 reference, indexicality, anaphora 的相關議題，也有一些探討了 information structure 方面的相關議題。本人近年也發表了數篇漢語兒童在 referring expressions 習得的論文，與在場學者也交流了一些看法與研究成果。

　　本人的論文發表安排在 7 月 27 日上午，此次發表的論文題目是 *Information distribution and argument structures: An analysis of Mandarin child speech, caregiver speech, and adult speech*。本人的論文獲得了不少與會學者正面的回應，一些意見及問題也對我繼續發展本篇論文有很大的幫助。

　　除了口頭論文發表之外，另外也安排了海報論文發表。海報展示讓作者在作品前和與會者進行面對面的說明及討論，近距離的互動不僅讓與會者對各個研究有更清楚的瞭解，也讓各研究發表者能獲得和與會者即時交流的機會。

　　除了較嚴肅的研討會場合之外，大會亦安排了餐會及徒步導覽的活動。在這些較輕鬆的場合中，與會的學者可以有更多的交流互動，以增進瞭解並建立友誼，同時對安特衛普的歷史文化也可以有更深入的認識。

　　此次參加第 14 屆國際語用學研討會(The 14th International Pragmatics Conference)不僅有機會發表本人的研究成果之外，也有機會與不同國家的學者做學術討論與分享，是一次很有意義、很豐富的學術交流經驗。

# 科技部補助計畫衍生研發成果推廣資料表

| 科技部補助計畫 | 計畫名稱: 漢語親子對話中共同注意力與指涉詞選擇之關聯研究 |
| --- | --- |
| | 計畫主持人: 黃瓊之 |
| | 計畫編號: 103-2410-H-004-130-　　　學門領域: 心理語言學 |

無研發成果推廣資料

# 103年度專題研究計畫研究成果彙整表

計畫主持人：黃瓊之　　計畫編號：103-2410-H-004-130-

計畫名稱：漢語親子對話中共同注意力與指涉詞選擇之關聯研究

| 成果項目 | | | 量化 | | | 單位 | 備註（質化說明：如數個計畫共同成果、成果列為該期刊之封面故事...等） |
|---|---|---|---|---|---|---|---|
| | | | 實際已達成數（被接受或已發表） | 預期總達成數（含實際已達成數） | 本計畫實際貢獻百分比 | | |
| 國內 | 論文著作 | 期刊論文 | 0 | 0 | 100% | 篇 | |
| | | 研究報告/技術報告 | 1 | 0 | 100% | | |
| | | 研討會論文 | 1 | 0 | 100% | | |
| | | 專書 | 1 | 0 | 100% | 章/本 | |
| | 專利 | 申請中件數 | 0 | 0 | 100% | 件 | |
| | | 已獲得件數 | 0 | 0 | 100% | | |
| | 技術移轉 | 件數 | 0 | 0 | 100% | 件 | |
| | | 權利金 | 0 | 0 | 100% | 千元 | |
| | 參與計畫人力（本國籍） | 碩士生 | 3 | 0 | 100% | 人次 | |
| | | 博士生 | 1 | 0 | 100% | | |
| | | 博士後研究員 | 0 | 0 | 100% | | |
| | | 專任助理 | 0 | 0 | 100% | | |
| 國外 | 論文著作 | 期刊論文 | 0 | 0 | 100% | 篇 | |
| | | 研究報告/技術報告 | 0 | 0 | 100% | | |
| | | 研討會論文 | 1 | 0 | 100% | | |
| | | 專書 | 1 | 0 | 100% | 章/本 | |
| | 專利 | 申請中件數 | 0 | 0 | 100% | 件 | |
| | | 已獲得件數 | 0 | 0 | 100% | | |
| | 技術移轉 | 件數 | 0 | 0 | 100% | 件 | |
| | | 權利金 | 0 | 0 | 100% | 千元 | |
| | 參與計畫人力（外國籍） | 碩士生 | 0 | 0 | 100% | 人次 | |
| | | 博士生 | 0 | 0 | 100% | | |
| | | 博士後研究員 | 0 | 0 | 100% | | |
| | | 專任助理 | 0 | 0 | 100% | | |
| 其他成果（無法以量化表達之成果如辦理學術活動、獲得獎項、重要國際合作、研究成果國際影響力及其他協助產業技術發展之具體效益事項等，請以文字敘述填列。） | | 國立政治大學特聘教授<br>國立政治大學學術研究優良獎<br>科技部獎勵特殊優秀人才 | | | | | |

| | 成果項目 | 量化 | 名稱或內容性質簡述 |
|---|---|---|---|
| 科教處計畫加填項目 | 測驗工具(含質性與量性) | 0 | |
| | 課程/模組 | 0 | |
| | 電腦及網路系統或工具 | 0 | |
| | 教材 | 0 | |
| | 舉辦之活動/競賽 | 0 | |
| | 研討會/工作坊 | 0 | |
| | 電子報、網站 | 0 | |
| | 計畫成果推廣之參與（閱聽）人數 | 0 | |

| 成果項目 | 量化 | 名稱或內容性質簡述 |
|---|---|---|
| 測驗工具(含質性與量性) | | |
| 課程/模組 | | |
| 電腦及網路系統或工具 | | |
| 教材 | | |
| 舉辦之活動/競賽 | | |
| 研討會/工作坊 | | |
| 電子報、網站 | | |
| 計畫成果推廣之參與（閱聽）人數 | | |

# 科技部補助專題研究計畫成果報告自評表

請就研究內容與原計畫相符程度、達成預期目標情況、研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）、是否適合在學術期刊發表或申請專利、主要發現或其他有關價值等，作一綜合評估。

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1. 請就研究內容與原計畫相符程度、達成預期目標情況作一綜合評估
   ■達成目標
   □未達成目標（請說明，以100字為限）
   　　　□實驗失敗
   　　　□因故實驗中斷
   　　　□其他原因
   說明：

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2. 研究成果在學術期刊發表或申請專利等情形：
   論文：□已發表 □未發表之文稿 ■撰寫中 □無
   專利：□已獲得 □申請中 ■無
   技轉：□已技轉 □洽談中 ■無
   其他：（以100字為限）

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3. 請依學術成就、技術創新、社會影響等方面，評估研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）（以500字為限）

   過去一些研究採用了言談語用的觀點來解釋幼童的指涉詞選擇（Allen, 2000; Clancy, 1993; 1997; Guerriero, et al., 2006; Huang, 2011, 2012; Narasimhan, et al., 2005; Serratrice, 2005）。這些研究雖指出了一些影響幼童指涉詞選擇的語用特徵，但是這些特徵主要是關於幼童對聽話者知曉狀態的評估(Skarabela, 2007)。要更完整的瞭解幼童的指涉詞選擇，另一種重要層面的心智狀態也必須考量，也就是所謂的共同注意力。共同注意力是關於幼童對聽話者注意力狀態的評估。從兒童發展的觀點來看，能協調聽話者的注意力並達成共同注意力的狀態是兒童在社會認知發展上的一個重要里程碑（Bruner, 1983, 1995）。

   本研究的目的主要有兩點。第一，本研究旨在探討共同注意力在漢語幼童指涉詞選擇中所扮演的角色。研究中將對共同注意力及Huang（2011, 2012）中所提的語用特徵作分析，並進一步瞭解共同注意力與這些語用特徵的互動關係。研究假設為當加入共同注意力這個層面的因素之後，更能有效解釋漢語幼童指涉詞的選擇。第二，本研究同時也將探討共同注意力在母親的指涉詞選擇中所扮演的角色。根據Guerriero, et al.（2006），幼童與母親在語言及非語言的指涉形式上通常極為相似。因此研究假設為母親輸入語中運用共同注意力的方式與幼童指涉詞選擇中運用共同注意力的方式會有直接的關聯性。

研究結果顯示說漢語的兩歲幼童在指涉詞選擇時會受到共同注意力這項因素的影響。也就是說，幼童對於指涉物是否在自己及母親的共同注意力中有敏感度，且能據此來選擇所要使用的指涉詞形式。而在與母親的語料相比較之後，發現幼童的指涉詞選擇與母親的指涉詞選擇呈現相似模式。另外，在將語料依據主詞論元及受詞論元分別分析後，發現共同注意力與指涉物的人稱有交互作用，也就是說這兩項因素的互動關係影響了幼童及母親指涉詞的選擇。

本研究的結果對幼童在語言、認知、以及社會互動上的發展提供了實証上的貢獻，同時對兒童語言習得研究在跨語言上的研究成果有所貢獻。另外，本研究除探討兒童語言之外，也分析母親的兒童導向語言，以瞭解親子互動的語言使用與兒童語言習得的關係。本研究對瞭解兒童語言及兒童導向語言，尤其是在自然互動中的語言使用，提供了描述層面及理論層面的價值及貢獻，也累積了漢語兒童語言習得研究的深度及廣度。