

CONDITION C IN ADULT AND CHILD THAI

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Thai is often identified as a language that violates CONDITION C of the binding theory, a grammatical constraint that has been claimed to be innate (Crain 1991). We present the first-ever experimental investigation of condition C in adult and child Thai. We show that (as per previous claims) Thai adults ‘violate’ condition C when the bound nominal is bare. When modified by a classifier, however, Thai referential expressions must obey condition C, thus showing that Thai does indeed adhere to condition C. We then show that Thai children (aged four to six years) apply condition C to all nominals, irrespective of whether they include classifiers. This ubiquitous adherence to condition C suggests that Thai children initially assume that condition C applies to all referential expressions. The implications for the universality and innateness of condition C are discussed.*

Keywords: condition C, principle C, binding, Thai, universal grammar, nativism, child language

1. INTRODUCTION. A major achievement of modern linguistic theory is the development of the binding principles, which govern the distribution and reference of nominals. These principles (so-called CONDITIONS A, B, and C) are purportedly universal and are thought to be present from birth (e.g. Crain & McKee 1985, Grimshaw & Rosen 1990, Crain 1991, Crain & Thornton 1998, Thornton & Wexler 1999, Sutton et al. 2010, Conroy et al. 2011, Sutton et al. 2011, among others). A classic counterexample to the universality of the binding principles is Thai—described for decades as a language that violates condition C of the binding theory (although see below for a more precise description). Such exceptions to the binding principles are a vexing problem since they challenge the universality of an otherwise well-understood area of grammar. As a result, the associated claim for innateness, while not impossible, is challenged.

This article reports on the first-ever investigation of the acquisition of condition C by Thai children. Broadly speaking, the motivation for this study is the following: if the binding conditions are part of the child’s linguistic endowment at birth, Thai children are expected to initially adhere to condition C (unlike Thai adults), only to (perhaps gradually) eliminate it from their grammars on the basis of positive experience. However, if the binding conditions are not present at birth, Thai children (like Thai adults, and unlike children acquiring other more well-studied languages such as English) may initially show no evidence of condition C. This therefore constitutes an ideal test case for the claim that the binding principles are present from birth, and therefore likely innate.

This picture is complicated somewhat by the question of whether Thai indeed does violate condition C. Recent proposals (Lee 2003, Larson 2005, Jenks 2011) have suggested that condition C is present in Thai, but that nominals in Thai differ in their internal structure (and thus their binding properties) from nominals in other languages (e.g. English). Specifically, Larson (2005) argues that bound R(efering)-expressions in Thai are structurally smaller than full D(eterminer) P(hrase)s, and thus invisible to condition

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C. Furthermore, when these R-expressions are modified by demonstratives or classifiers, the additional D-layer required by these elements renders the R-expressions full DPs, and thus visible to condition C (this is discussed in more detail below). Therefore the prediction is that adult Thai speakers will ‘violate’ condition C when the R-expression being bound is bare (unmodified by a demonstrative/classifier), but not when it is modified by a demonstrative or classifier. While Larson reports native Thai judgments that comport with this prediction, no large-scale experimental investigation of (adult) Thai has ever been conducted on this issue.

This article reports on two sets of experiments. The first set investigates whether condition C operates in the grammars of native adult Thai speakers, and whether there is a difference between unmodified nominals and modified nominals (DPs). The second set then tests the same questions with young children three to six years old. In what follows, we first briefly present the BINDING CONDITIONS and the theory of how they work. We purposefully select a classic framework for condition C, since the results of our experiments do not speak to the more recent attempts to reduce condition C to more atomic factors (though see §4 for a discussion of more recent treatments of condition C, both within a generativist tradition and elsewhere). We then describe the literature to date on the acquisition of condition C in languages other than Thai, and discuss the properties of adult Thai—both the traditional position on binding in Thai and Larson’s (2005) proposal. We then present the two experiments, first on adult Thai and then on monolingual children acquiring Thai (as well as a third control experiment on English). We conclude with a discussion of what these results mean for the status of condition C in child grammar and how various nongrammatical theories of condition C might account for our findings.

2. BINDING THEORY.

2.1. THE BINDING CONDITIONS. Chomsky (1981, following Lasnik 1976) establishes the BINDING THEORY as a bedrock of UNIVERSAL GRAMMAR. At its essence, binding theory posits three principles that account for the distribution of three kinds of nominals: anaphors (reflexives and reciprocals), pronouns, and R-expressions (e.g. proper names).

- (1) a. CONDITION A: An anaphor must be bound within its binding domain.
- b. CONDITION B: A pronoun must be free within its binding domain.
- c. CONDITION C: An R-expression must be free everywhere.

Simplifying somewhat, we assume that the binding domain of nominals is a clause, a complex NP, or a preposition phrase. Binding, here, refers to a syntactic (and semantic) relation established between two elements, a nominal and its antecedent (see below for more details). This is to be distinguished from COREFERENCE (sometimes referred to as accidental coreference), which is the relation between two referring expressions that (accidentally) have the same referent. Coreference is not a property of syntax proper, but of discourse (see Reinhart 1983, Dalrymple 1993, Fox 2000, among others). Finally, the term COINDEXING will be used as a theoretically neutral cover term to refer to a situation where two nominals share the same referent (through either binding or coreference). This will be useful in our discussion of the empirical facts and methodology.

The formulations of the binding conditions all share some basic properties, namely (i) indexing and (ii) c-command. The former is a notational convention used to indicate what the referent of a particular nominal is. For example, in 2, the two nominals share the same index (subscript *i*) and are therefore referred to as being coindexed. This nota-

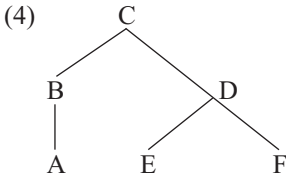
tion indicates that the speaker of this sentence intended that the person referred to by *John* is the same person referred to by *he* (i.e. John said ‘I love running marathons’). In 2b, by contrast, the two nominals in question are contraindexed, a situation that indicates DISJOINT REFERENCE. In this sentence, *John* refers to a different person from *he* (e.g. John said ‘Bill loves running marathons’).

- (2) a. John_i said that he_i loves running marathons. (coindexed reference)
 b. John_i said that he_j loves running marathons. (disjoint reference)

The second property of binding is C-COMMAND. There has been significant debate as to the specific formulation of c-command, but the following rough definition will suffice.

- (3) C-COMMAND: If the node that immediately dominates α also dominates β , then α c-commands β .

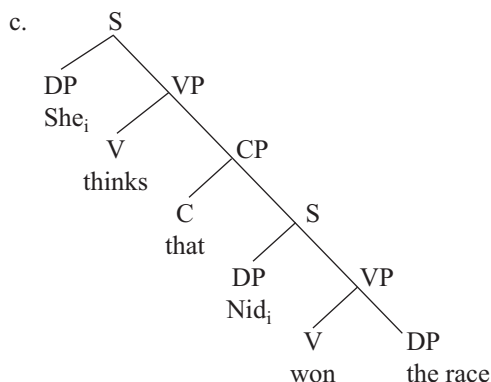
Consider the structure in 4. In this structure, the node labeled B is said to c-command A, D, E, and F since the node that immediately dominates B (C) also dominates A, D, E, and F. However, A does not c-command anything (other than itself), since the node that immediately dominates A (B) dominates only A. Furthermore, E c-commands F, but nothing else, since the node that immediately dominates E (D) does not dominate anything other than F.



These two simple, basic tools are used to formulate the notion of binding. When a nominal is (i) coindexed with and (ii) c-commanded by an antecedent, the nominal is said to be BOUND. If one of these two conditions (c-command or coindexing) is broken, then the binding relation is also broken and the nominal is now said to be FREE.

Here we focus on condition C, which states that an R-expression must be free everywhere in the sentence. We exemplify this with Thai sentences that actually obey the traditional binding theory (Thai sentences that appear to violate condition C are discussed shortly). The R-expression *Nid* in the Thai sentence 5a is coindexed with the pronoun ‘she’, and the meaning of this sentence is that Nid thinks that she herself won the race (here we consider only the coindexed-reference reading). This sentence is grammatical because the pronoun ‘she’ is subject to condition B (not condition C). While it is coindexed and c-commanded by the proper name *Nid*, it is not bound within its domain (the clause, in this case). However, 5b, in which the order of name and pronoun are reversed, is ungrammatical since proper names are governed by condition C (1c)—whose binding domain is the entire sentence. Because the name is bound within the sentence, 5b is ungrammatical by condition C (see the tree in 5c).

- (5) a. ní_i khít wâa kháw_i chaná? kaan-khàengkhǎn
 Nid think that she win race
 ‘Nid_i thinks that she_i won the race.’
 b. *kháw_i khít wâa ní_i chaná? kaan-khàengkhǎn
 she think that Nid win race
 ‘*She_i thinks that Nid_i won the race.’



This is a standard treatment of condition C, although other accounts of binding exist. For example, Reinhart and Reuland (1993) argue that the binding theory consists of conditions A and B, but not C (which is treated as a pragmatic effect); Demirdache (1997) argues that all three principles of the binding theory are entirely semantic/pragmatic; O’Grady (2005) argues that condition C violations may be accounted for purely on the basis of processing considerations; and Van Hoek (1995, 1997) argues that condition C may be explained entirely through exposure to positive evidence and general cognitive principles (within the broad framework of COGNITIVE GRAMMAR). Moreover, even modern MINIMALIST approaches to binding attempt to reduce things to more primitive properties of the language system. We return to these alternative treatments of binding in the discussion section as we evaluate the experimental results, but for now we assume the standard binding theory. We turn now to the acquisition of condition C by children acquiring languages such as English.

2.2. THE ACQUISITION OF CONDITION C. Research on the acquisition of the binding conditions is extensive.¹ The most widely cited study on the acquisition of condition C is Crain & McKee 1985, which tested sixty-two English-speaking children (mean age 4;2) using the TRUTH-VALUE JUDGMENT TASK (henceforth TVJT). The TVJT is a method in which a child looks at a stimulus (typically a story acted out with toys) and is then presented with a statement about the stimulus. The child’s task is to provide a true/false judgment of that statement with respect to the stimulus. It is now quite widely used in the field since it minimizes performance factors, and thus is thought to be a good (though not perfect) reflection of underlying linguistic competence. Crain and McKee (1985) used four conditions in which the test sentences were manipulated with respect to condition C.

- (6) a. Smurf_i ate the hamburger when he_i was inside the house.
 b. When he_i was inside the house, Smurf_i ate the hamburger.
 c. *He_i ate the hamburger when Smurf_i was inside the house.
 d. When Smurf_i was inside the house, he_i ate the hamburger.

Sentence 6c, the only ungrammatical test sentence, is ungrammatical on the coindexed reading because *Smurf* is both coindexed and c-commanded by the pronoun *he*, thus satisfying the criteria for binding, and therefore violating condition C. In none of

¹ Here we briefly review the literature on the acquisition of condition C. For findings on the acquisition of conditions A and B, see Jakubowicz 1984, Solan 1987, Chien & Wexler 1990, McDaniel et al. 1990a,b, Thornton & Wexler 1999, Conroy et al. 2011, among others.

the other three sentences does a violation of any binding condition obtain.² Crain and McKee found that even the youngest of their children (mean age 3;1) correctly rejected 6c (in scenarios where, for example, Eeyore ate a hamburger when Smurf was on the fence, and Smurf ate a hamburger when he (Smurf) was inside the house) nearly 80% of the time, while accepting the other three sentences at even higher rates. They conclude that knowledge of condition C is present from the very earliest ages. These results have been replicated several times in various languages (e.g. Chien & Wexler 1990, Thornton & Wexler 1999, Kazanina & Phillips 2001, Kiguchi & Thorton 2004), suggesting that (i) the TVJT is an appropriate methodology for this kind of question, and (ii) very young children acquiring a wide range of languages exhibit knowledge of condition C.

More recently, Sutton, Lukyanenko, and Lidz (2010) tested children on their knowledge of condition C using the INTERMODAL PREFERENTIAL-LOOKING PARADIGM (Hirsch-Pasek & Golinkoff 1996), and found that children as young as thirty months old showed knowledge of condition C. Sutton, Fetters, and Lidz (2011) take this result one step further and show that performance on the condition C experiment correlated with two measures of processing speed, suggesting that failure to exhibit knowledge of condition C (at least at this young age) may be more of a performance issue than one of knowledge. Thus the empirical evidence that condition C is present at the youngest testable ages in children acquiring English (and other languages) is impressive and has generally been taken as evidence that condition C is part of the child's linguistic endowment at birth (Crain 1991).

These findings of the early acquisition of condition C are all the more impressive because of the nature of knowledge involved. Condition C does not make an affirmative statement about what is permitted in the grammar, but rather it makes a negative statement about what is not permitted. Such conditions are referred to as GRAMMATICAL CONSTRAINTS, and they hold a special place in linguistics because they are at the heart of the so-called learnability problem (Wexler & Culicover 1980, Pinker 1984, Crain 1991, Lidz 2007, among others). The essence of the learnability problem is the question of how the child acquires proper knowledge of a grammar on the basis of finite, positive data. Such knowledge entails both affirmative properties of the language (e.g. word order, case marking, overt movement such as WH-movement, etc.) and negative properties (i.e. things that are disallowed in the language, such as condition C, subjacency principles, etc.). The affirmative properties may well be learned on the basis of positive data (though there are serious logical problems that arise even there), but the negative properties of a language are downright impossible to acquire from the input because children never get evidence of what is impossible in the language.

Consider again the set of sentences in 6, with the ungrammatical 6c ruled out by condition C. The learnability problem for condition C is not that the surface string in 6c is unattested in the input. Strings of the form *pronoun ... referential expression* undoubtedly occur in the input, though to be sure, they are extremely rare. Sutton (2014) conducts a corpus search of the CHILDES database (MacWhinney 2000) and finds that in the child-directed speech to 116 children aged 2;3–5;0 (with a total of 26,210 child-directed utterances), there were eleven utterances in which a third-person pronoun pre-

² In 6a, the pronoun is c-commanded by the R-expression, but there is an intervening clause boundary, meaning this binding relationship does not violate condition B. In 6b, the R-expression is not c-commanded by the pronoun because the modifying *when*-clause renders the pronoun too deep to c-command the R-expression. The pronoun in 6d is similarly not c-commanded by the R-expression.

cedes and c-commands a referential expression (0.04%), none of which had the coindexed-reference reading (consistent with condition C). So when the child hears 6c only with a disjoint-reference reading (while hearing sentences 6a,b, and d with both disjoint and coindexed readings), why would the child assume that the coindexed reading is impermissible? Why would the child not instead assume that this reading has simply never been encountered to date (not implausible, given how rare this pattern is)? After all, this is what children do in uncountable other instances—they regularize otherwise irregular patterns. So, given the absence of negative (corrective) evidence (Brown & Hanlon 1970, among others), this process of paring away illicit readings is generally seen as untenable, on the basis of positive evidence alone.

And in fact, the learnability problem is far more severe than suggested above. Even if a child notices that sentences of the type in 6c never occur with a coindexed-reference reading, the child must postulate some condition of grammar that captures this phenomenon. Perhaps they would postulate a condition of grammar that says something like ‘referring expressions must not follow coindexed pronouns’. However, this is clearly an incorrect hypothesis (though consistent with sentences of the type in 6c). This hypothesis does not capture sentences like 6b: *When he was inside the house, Smurf ate the hamburger*. There are many other hypotheses that the child might consider (all consistent with the data encountered to that point, but nevertheless incorrect), and it is far from certain that all children would happen upon the correct hypothesis consistently, based upon rare and variable data, in such short order (within thirty months, according to Sutton et al. 2010).³ These facts, and this reasoning, raise the question of whether language (including the negative statements on what is impermissible) is actually learnable from the input (hence, the learnability problem).

The solution to this learnability problem, according to classic work in the generative tradition, is two-fold. First, the child must be CONSTRAINED from even entertaining all of the possible hypotheses. Thus no paring away is required, since a GRAMMATICAL CONSTRAINT prevents overgeneration of a grammar. Armed with a constraint, the child faces an entirely different learning problem from the unbiased child. The child with a constraint faces input that is far less ambiguous and entertains a much narrower set of hypotheses. Learning is therefore less errorful, it is more uniform, and it is relatively quick. And this comports nicely with the observed empirical facts on how children learn language.

The second part of the solution is that a child faced with language data that are ambiguous (as is most of language) does not begin with the grammar that is most permissive, since this would lead the child into the situation of having to pare away overgenerated hypotheses on the basis of positive evidence alone. To avoid this intractable situation, the child selects the LEAST PERMISSIVE (most tightly constrained) grammar, which means that the task for the child is to expand the grammar on the basis of positive evidence. This logic (often referred to as the SUBSET PRINCIPLE; Wexler & Manzini 1987) has been fruitfully applied to numerous domains of language for decades (e.g. Rizzi 1982 for the parameterization of bounding nodes, Wexler & Manzini 1987 for the GOVERNING CATEGORY PARAMETER as it relates to binding, Hyams 1986 for the param-

³ In fact, as noted by Lidz (2016), a very similar version of this process played itself out among linguists in the 1960s and 1970s. There were numerous failed attempts by linguists to characterize the precise nature of the constraint on referential expressions because each hypothesis put forward in the literature captured a large amount of the data, but not quite all of it. It took more than twenty years of fierce debate, scouring ever more complex data, for the field to finally arrive at the CORRECT characterization of the distribution of referential expressions.

eterization of null subjects, etc.). As we shall see, the logic of the learnability problem plays a role in the Thai data presented below.

2.3. UNIVERSALITY OF CONDITION C—THE EXCEPTION OF THAI. While the binding conditions are found in the vast majority of languages, there have been sporadic (but growing) reports of languages that violate one or more of them, particularly condition C. This suggests that the binding theory perhaps does not apply universally. While this does not necessarily negate the argument for innateness (universality \neq innateness), without an explanation of why some languages fail to exhibit this supposedly innate set of principles the claim for innateness remains suspect.

The first such exceptional language to be reported was Thai, initially reported by Lasnik (1989) but then discussed extensively by numerous authors (Hoonchamlong 1991, Lee 2003, Larson 2005, among others). Examples in which condition C seems to be violated are given in 7a–b. In each case, there are two repeated names (*Noi* in 7a, *Nid* in 7b), one c-commanding the other. According to condition C, such examples should be unacceptable because the second R-expression is bound by the first. However, Thai speakers readily accept such sentences on a coindexed reading.

- (7) a. $n\ddot{o}y_i$ khít wâa $n\ddot{o}y_i$ cà? chaná?
 Noi think that Noi will win
 ‘Noi thinks that she will win.’
 b. $nít_i$ chǎp nǎjsǎu thîi khun hây (kàp) $nít_i$
 Nid like book that you give (to) Nid
 ‘Nid likes the book that you gave her.’
 c. * $kháw_i$ khít wâa $n\ddot{o}y_i$ cà? chaná?
 she think that Noi will win
 ‘She_i thinks that Noi_i will win.’
 d. Noi_i khít wâa $kháw_i$ cà? chaná?
 Noi think that she will win
 ‘Noi_i thinks that she_i will win.’

Hoonchamlong (1991) points out that condition C is violable only when the two nominals in question are exact copies of each other (the EXACT-COPY CONDITION). If the R-expression is anteceded by a pronoun, for example, coindexing is ungrammatical (7c). Note that when the order of pronoun and name are reversed, as in 7d, coindexing is now permissible since the bound nominal in question is a pronoun, which is subject to condition B, not condition C. And because a clause boundary exists between the embedded pronoun and its antecedent, the pronoun is not bound within its binding category. Thus the facts about condition C in Thai are as follows: (i) referential expressions in a c-command relation may be coindexed, unlike most other languages, and (ii) these referential expressions must be exactly identical—if one of the expressions is a pronoun, coindexing is no longer permissible.

Lasnik (1989) proposed an explanation of these facts that invoked a new condition of binding, one that he dubbed CONDITION D. Moreover, both conditions C and D were restated in terms of the referentiality of the R-expressions in question. On this view, condition C states that an R-expression may not be bound by R-expressions that are either less referential or equal in referentiality. Thus a name (very highly referential) may not be bound by other names (equal in referentiality) or by pronouns (lower in referentiality). Condition D, however, states that an R-expression must not be bound by anything lower in referentiality. Thus a name may not be bound by a pronoun (which is lower in referentiality than a name—a fact that seems to hold for every language for which we have

data), but it MAY be bound by another name (which is equal in referentiality). The idea is that these two conditions are parameterized, with some languages instantiating condition C (like English), and others instantiating condition D (like Thai, Vietnamese, etc.).⁴

In this article, we adopt a different account of these facts, one that was initially proposed by Larson (2005; see also Lee 2003 and Jenks 2011 for related proposals⁵), which contends that bound R-expressions in Thai have a structure that renders them invisible to condition C. It should be noted that this particular account is not crucial to this study, but it provides a framework in which to understand our findings. Moreover, as will become clear, this account allows us to explain new data that Lasnik’s condition D is unable to account for. The argument begins with a proposal made by Dechaine and Wiltschko (2002), who argue that pronouns (crosslinguistically) come in at least three kinds: pro-DP, pro-PhiP, and pro-NP. These pronouns differ in how articulated their functional structure is: pro-DPs have the most functional structure, containing a D-layer, a phi-layer, and an N-layer (see Table 1a). Pro-NPs have the least structure (none; Table 1c), while the intermediate type, which they dub a pro-PhiP, consists of an NP with some functional structure, but not a full determiner phrase (Table 1b; see also Richards 1997 for a rather different theory of binding with reference to impoverished features). The term ‘PhiP’ is adopted because these pronominals contain phi-features—typically features such as number, person, and so forth. Dechaine and Wiltschko draw evidence for this three-way distinction from a variety of sources, most crucially, for our purposes, from differences in binding properties. They argue that pro-DPs are subject to condition C, while pro-PhiPs are what we typically think of as pronouns and are therefore subject to condition B. Larson extends this idea to nominals (as opposed to pronominals) in Thai.

NOMINAL TYPE	determiner phrase	phi phrase	noun phrase
NOMINAL STRUCTURE	<div>DP ├── D └── Phi-P ├── Phi └── NP └── N</div>	<div>Phi-P ├── Phi └── NP └── N</div>	<div>NP └── N</div>
VISIBLE TO CONDITION C?	yes	no	no
	a. pro-DP.	b. pro-PhiP.	c. pro-NP.

TABLE 1. Functional structure of pro-DP, pro-PhiP, and pro-NP.

The essence of the claim is that bound R-expressions, like the second instance of the name in each of the examples in 7a–b, are not in fact DPs but PhiPs, and therefore are not visible to condition C. The antecedent in these sentences is in fact a full DP, fully

⁴ Importantly, note that Lasnik’s proposal conforms to the logic of the learnability problem (see §2.2 above). The child starts with the most restrictive option (condition C), and then expands out to condition D on the basis of positive evidence.

⁵ One weakness of Larson’s approach is that there is no natural explanation for the exact-copy condition (Hoonchamlong 1991). Lee’s (2003) treatment of Thai (and Zapotec), by contrast, appears to naturally account for this condition. On this view, repeated nominals in these two languages involve bound variables with a spelled-out copy. Thus the second repeated nominal is a bound copy of the antecedent, and therefore is necessarily identical. Moreover, Lee claims that this configuration is restricted to nominals of type *e*. Nonetheless, we adopt Larson’s view because of its ease of explication, and simply note that our commitment is to neither Larson (2005) nor Lee (2003), but rather to the fact that condition C is observable in Thai.

referential and subject to condition C. The second R-expression, the PhiP, receives its features (both agreement and noun features) from the antecedent, accounting for the exact-copy condition: the PhiP matches the antecedent in features because the antecedent is the source of those features. The PhiP may be spelled out in one of two ways: (i) either the phi head may be spelled out, in which case a classic pronoun occurs (as in 7d above), or (ii) everything below the phi head (including N) may be spelled out (as in 7a). This latter option gives the impression of a full R-expression, since the N head is spelled out.

Crucial for our purposes is that, under this approach, when a nominal is modified by a classifier or demonstrative, for example, then this modifier necessitates the projection of a D-layer (see also Jenks 2011 for a very similar proposal for Thai nominals). A nominal modified by a classifier/demonstrative is therefore obligatorily a DP, and the PhiP option is unavailable. This means that nominals modified by classifiers/demonstratives should always induce condition C violations, unlike the bare nominals discussed thus far.

A complication is the fact that in spoken Thai, classifiers are generally unavailable in the absence of a modifier. If the head noun were, say, *mǎa* 'dog', then the associated classifier *tua* may or may not occur (typically not).⁶ This poses a problem for testing adult controls in particular, since the phrase *mǎa tua* 'dog CL' is highly unnatural and stilted, with the bare noun *mǎa* 'dog' preferred. When tested in our experiments, adults may thus reject classifier phrases simply because they sound stilted or bookish, and not necessarily because of their referential properties.

To solve this problem, we used adjectives to modify noun phrases. In such constructions, we found that classifiers were much more acceptable, and the absence of classifiers was strongly dispreferred. In a norming study with five native Thai-speaking adults, bare nouns (e.g. *mǎa* 'dog') were rated highly, as were nouns modified by classifiers and adjectives (e.g. *mǎa tua nǎarák* 'dog CL cute'). However, nouns modified by only an adjective (without the classifier, e.g. *mǎa nǎarák* 'dog cute') or by only a classifier (without the adjective, e.g. *mǎa tua* 'dog CL') were rated very poorly. The most natural context for classifiers, therefore, requires the presence of a modifying element, such as an adjective.⁷

Example 8 is a sentence with the same structure as 7a, but the nominal is a common noun, in this case an occupational title, which allows for the presence of a classifier.⁸ In

⁶ What we need are obligatory contexts for classifiers, or at least contexts in which classifiers are natural and preferred. Obligatory contexts for classifiers include when the noun is modified by a numeral or a demonstrative (among other things; see Visonyangoon 2000, Piriawiboon 2010, Jenks 2011). However, such constructions pose serious problems for TVJT design, and we were unable to use structures such as these.

⁷ As an anonymous referee points out, nouns modified by adjectives may in fact occur without classifiers (Piriawiboon 2010, Jenks 2011), albeit with an indefinite reading. However, our norming task found that the target nominals (noun + adjective) were strongly preferred with a classifier rather than without. Moreover, this noun + classifier + adjective construction takes a definite reading (as discussed in Jenks 2011), which makes these constructions appropriate for a story-telling context such as those in our experiments. Unmodified nominals (what we are referring to as PhiPs), by contrast, may take a definite or an indefinite reading. In principle, this may be one source for the coindexed reading, though see the next footnote.

⁸ As an anonymous referee points out, use of the common noun is not without complications. Common nouns unmodified by classifiers in Thai are ambiguous between definite and indefinite reference (Piriawiboon 2010, Jenks 2011). The common noun interpreted as an indefinite results in something similar to the English *A dog thinks a dog will win*, where accidental coreference may occur, thereby providing the illusion of a condition C violation. However, the results of the experiments presented below show that children nonetheless eschew this interpretation, rendering this issue moot for our purposes. Moreover, this cannot be the source of condition C violations in adult Thai since the examples in the literature involve proper names,

8, as in 7a, coindexation is permissible. However, in 9 (identical to 8 in every way except that the two nominals are modified by a classifier and adjective), coindexation is no longer acceptable. On the view adopted here, the ungrammaticality of 9 is a classic condition C violation, as the bound nominal in question is undoubtedly a DP and therefore subject to condition C. Note that Lasnik's condition D provides no obvious explanation for this, since the nominals in both 8 and 9 are identical (and therefore equal in referentiality), so condition D should thus allow coindexation.

- (8) ?aacaan_i khít wâa ?aacaan_i cà? chaná?
 teacher think that teacher will win
 'The teacher_i thinks that he_i will win.'
- (9) *?aacaan khon ?ûan_i khít wâa ?aacaan khon ?ûan_i cà? chaná?
 teacher CL fat think that teacher CL fat will win
 'The fat teacher_i thinks he_i will win.'
 (lit. 'The fat teacher thinks the fat teacher will win.')

In sum, then, on this view bound nominals are PhiPs and not subject to condition C, while modified nominals are full DPs subject to condition C.⁹ The import of this for our purposes is that condition C does in fact apply in adult Thai grammar, albeit in limited contexts and in a manner that poses interesting predictions for children acquiring Thai. We turn to this in the next section.

2.4. PREDICTIONS FOR ADULT AND CHILD THAI. This approach to condition C in Thai makes a simple prediction for adult Thai: it should be possible for bare nouns (PhiPs) to be bound, but with the addition of a classifier, this binding should be ungrammatical. For the sake of discussing the predictions for Thai children, let us assume this can be experimentally verified, although we certainly do so in experiment 1 below. With respect to Thai children, let us consider three logically possible predictions based on what we know about children acquiring other languages and the more prominent theories in the field about how children acquire language.

- **PREDICTION 1 (nonnativist hypothesis): Rampant violation of condition C.** Thai children, unlike English-speaking children, might violate condition C both when the bound nominal is a PhiP and when it is a DP. That is, children might violate condition C in all contexts. Over time, on the basis of positive exposure, they learn that binding is permissible only when nominals are PhiPs. Note that this prediction runs afoul of the learnability problem discussed in §2.2, since it is not clear how a child removes the possibility of a reading on the basis of positive evidence alone. Nonetheless, the most consistent interpretation of this position is that condition C is not innate.¹⁰

which are unambiguously specific. The readings we get with common nouns are exactly analogous to those of proper names, suggesting that definiteness (or specificity) is not a controlling factor in this phenomenon. Moreover, as an anonymous referee also points out, this indefinite reading is somewhat infelicitous within the context of our experiments. Nonetheless, since both definite and indefinite readings are available with the PhiPs in our experiments, it is possible that some of the variation seen in experiment 1 below is due to the reading in which one or both nominals are indefinite.

⁹ Henceforth we thus use the terms *PhiP* and *bare nominal* interchangeably, and the terms *DP* and *modified nominal* interchangeably.

¹⁰ As an anonymous referee notes, there are in fact numerous nativist explanations, were such a result to obtain. For example, if the child assumes Thai is an NP language (in the sense of Bošković 2008 and others) and does not know that classifiers project a D layer, then we might expect rampant violation of condition C. This too has serious learnability problems, so such a proposal would likely not pass muster.

- PREDICTION 2 (nativist or nonnativist hypothesis): **Children reflect the adult system from the outset.** Thai children might behave just like Thai adults from the outset and allow bound readings of PhiPs but not of DPs. If this hypothesis is confirmed, it would be consistent with the nativist approach, and it would also show that children have acquired the unique properties of nominals in their language. It might also be consistent with an input-based approach to acquisition, since children would be mirroring their input very closely.
- PREDICTION 3 (nativist hypothesis): **Rampant observation of condition C.** Thai children obey condition C in all contexts. This observation of condition C (in both PhiP and DP contexts) is reminiscent of children acquiring languages like English, but unlike Thai adults. Over time, Thai children would learn that binding is permissible only when the R-expressions are PhiPs. This finding would be striking evidence in favor of the nativist hypothesis, since it would show that condition C operates at very young ages, and it would also show that the particular properties of nominals in Thai are, rather unsurprisingly, slow to be acquired. This may also suggest that the default setting for nominals is that nominals are DPs. And finally, this would be consistent with the learnability considerations discussed above, in that it would show that children initially entertain a grammar that is most restrictive.

A summary of these possible findings and their implications is given in Table 2 (the fourth possibility, where Thai children accept the bound reading for DPs but not PhiPs, while possible, has no principled motivation, so we do not consider it further). We turn now to the two experiments, the first on adult Thai speakers, and the second on children.

PREDICTION	BOUND READING	INTERPRETATION
1	PhiP = ✓ DP = ✓	Condition C violated across the board: Nonnativist thesis confirmed.
2	PhiP = ✓ DP = *	Thai children = Thai adults: Nativist thesis confirmed, with quick acquisition of idiosyncratic properties of nouns in Thai.
3	PhiP = * DP = *	Condition C applied across the board: Nativist thesis confirmed, with slow acquisition of idiosyncratic properties of nouns in Thai.

TABLE 2. Summary of predictions and the associated interpretations of each.

3. EXPERIMENTS.

3.1. EXPERIMENT 1: ADULTS.

PARTICIPANTS. The participants were undergraduate students at a university in Bangkok, Thailand, between eighteen and twenty-eight years old. Only non-English majors were included, and all participants used Thai as the main means of communication within their family and in everyday life. We used a between-subjects design, with ninety participants in the PhiP condition and 172 participants in the DP condition.

GENERAL PROCEDURE. Each group watched a series of animated videos, which told a classic condition C-type story (see below for details). At the end of each animated video, a puppet made a statement about the story. Participants in the PhiP condition heard a sentence in which the coindexed nominals were bare (therefore coindexation was predicted to be permissible), and those in the DP condition heard a sentence in which the coindexed nominals were both modified by a classifier (so coindexation was expected to be impermissible).¹¹ The nominals in both conditions were identical, thus satisfying the exact-copy condition (Hoonchamlong 1991).

¹¹ Jenks (2011) points out that the classifier *tua* is ambiguous between a true classifier and a so-called compound adjective construction. Thus *tua yai* could be the classifier followed by the adjective ‘big’, or it could

Participants were asked to indicate whether the puppet's statement was true or false with respect to the story they just watched. We also asked for justifications for their responses, some of which were used later to determine whether participants would be excluded from the study. The entire experiment, including setup and explanations, lasted less than thirty minutes.

MATERIALS. The materials used to test adults were also used to test children in experiment 2. We therefore explain these materials in detail here, and do not repeat this below in our description of experiment 2. We used animated video clips to present the stories, since this allowed us to carefully control the test sentences for prosody and tempo, as described below, and to test the adults on precisely the same stimuli as the children. Video animations involving animals were created using photographs and video software. The videos were made into a cartoon-like story, which was enjoyable for children to watch. All clips were then put into playlists to create lists of items (including fillers), which were a total of eighteen minutes in length. The narration was created using three to five native Thai speakers (depending on the number of characters in each story), all graduate students at Kasetsart University in Bangkok, Thailand. The narrators were unaware of the theoretical questions being investigated, and so were not biased one way or the other in their narration.

The actual test sentences were recorded independently by a Thai female speaker with a child-friendly voice. The order in which the test items were recorded was random, so the narrator was not aware if the target response for each particular item was 'true' or 'false'. This again avoided the possibility of prosodic cues in the audio influencing participants. Furthermore, the test items were checked by a native Thai speaker (the second author) for prosodic imbalances (e.g. stress on one of the nominals) that might influence interpretation toward a coindexed- or a disjoint-reference reading.

THE (MODIFIED) COMPETITION STORY. The **COMPETITION STORY** (Crain & Thornton 1998) has become a standard instrument in the investigation of condition C (see, for example, Kazanina & Phillips 2001) and formed the basic template for the items in this study. Each test item (see Appendix A for screen shots of a sample item) consisted of three phases: **INTRODUCTION**, **MAIN STORY**, and **PUPPET SCENE**. In the introduction, characters were displayed in a horizontal line across the screen and individually named by the narrator. The main story consisted of a modified competition story (see below), at the end of which the characters reappeared (puppet scene), arranged in the same horizontal pattern as in the introduction. The puppet then arose from the bottom of the screen and settled in a spotlight area underneath the characters. The puppet provided an opening sentence (e.g. 'That was a fun story!'), followed by a generic lead-in such as 'Hmm, here's what I think ...', followed by the test sentence.

The puppet remained on the screen for three seconds and then descended out of the scene. Adult participants were asked to judge whether the puppet's last statement was correct or incorrect, marking their responses on a sheet in front of them. They were then asked for a justification for why the puppet was right or wrong (the procedure for children was slightly different; see below).

be the compound adjective, something like the English 'big-bodied'. Crucially, *tua* is one of a handful of adjectives that have this dual function. In our experiment, we used several different classifiers, including *khon*, the classifier for humans. We found no item effects, so we conclude that any ambiguity in the status of *tua* did not play a role in our experiment. We thank the anonymous referee who pointed this out to us.

The crux of the story is that there are two characters that are of the same kind (in the story below, two dogs), one of whom says something about a third character (in this case, the monkey), and the other of whom says something about herself. This creates two potential readings: a disjoint-reference reading and a coindexed-reference reading. Note in the sample story that all characters are labeled with exactly two adjectives. This was to create ambiguity in the test item—a crucial design feature of the test items. We return to this point below.

Because of the nature of the condition C facts in Thai, we slightly modified the standard competition story. The key elements of the modified competition story are shown in 10—all test items followed exactly these elements. The elements listed in 10 are exemplified in the sample (mismatch) test story in 11. See Appendix A for a screen-by-screen example of this item, and Appendix B for the original Thai version.¹²

(10) Key elements to the modified competition story

- ① A total of four characters participate in the story, two of whom are of the same kind. All characters are described by two adjectives (e.g. ‘big and cute’, ‘small and naughty’, etc.) throughout the story.
- ② One character (one member of the like-kind pair) becomes the JUDGE.
- ③ The other three are COMPETITORS.
- ④ One nonlike-competitor does poorly in the competition.
- ⑤ The like-competitor and the fourth character do about the same in the competition.
- ⑥ The judge eliminates the poor performer, and delays judgment on the like-competitor.
- ⑦ The judge decides that the fourth character is the winner.
- ⑧ The judgment is repeated several times, and a prize is awarded to reinforce who the winner was.
- ⑨ The like-competitor objects and insists that self won the competition, thereby saying ‘I won the competition’ several times.
- ⑩ The like-competitor takes the prize and repeats ‘I won the competition’.

(11) Test story: Mismatch condition

- a. [Introduction phase]: This story is about four friends: big cute dog, small naughty monkey, small happy turtle, and small cute dog.①
- b. [Main story phase]: One day all four friends are outside when big cute dog suggests that they have a competition. She suggests they see who can run the fastest, and she volunteers to be the judge,② saying that whoever wins the race gets a delicious orange as a prize. They all agree, and so they decide to see who can run the fastest around a large rock.③ First to try is small happy turtle, who does not run very fast, but tries her best.④ Next is small cute dog, who is a fast runner, and does very well. And finally small naughty monkey runs, and she too is a fast runner.⑤ Now it’s time for big cute dog to make a decision. She first judges that small happy turtle was not the winner, and then turns her attention to small cute dog and small naughty monkey. She says to small cute dog, ‘You ran really fast, but before I make my decision, let me think about how well small

¹² Our contexts and test items were normed with native speakers of Thai for naturalness, and unnatural contexts/items were discarded or redesigned. Moreover, after the experiments were completed, the sentences were renormed, and no anomalies were found.

naughty monkey ran.’^⑥ Small cute dog agrees and steps back. Big cute dog then says to small naughty monkey, ‘You ran so fast, and you were not even tired at all, so I think YOU won the race.’^⑦ Here is your prize.’ Small naughty monkey says, ‘I’m glad I won the race. Thanks a lot.’^⑧ Just then, small cute dog objects, ‘Hey, that’s not right! I am the fastest animal here, so I deserve the orange. I won the race.’^⑨ Small naughty monkey says, ‘Well, big cute dog said I won the race, but I don’t mind sharing this orange.’ Small cute dog takes the orange and says, ‘No, I won the race, so the orange is mine’ and she leaves with the orange.^⑩ And that’s the end of this story. Hey puppet, can you tell us something about this story?

- c. [Puppet phase]: Puppet: Sure, this was a fun story about four friends. Hmm, here’s what I think ... [test item]

The first thing to note is the use of adjectives in the story. Each character was referred to with two adjectives (and a classifier) every time it was mentioned (adjectives were chosen on the basis of naturalness as well as the potential for ambiguity between the characters). This sounds stilted in English, but is less so in Thai (according to our native-speaker consultants, as well as the second author). This was done so as to (i) make licit the use of classifiers, thereby facilitating the DP-condition test items, which we discuss shortly, and (ii) create ambiguity in a fashion identical to the PhiP condition.

We focus here on the mismatch items only—those items whose targeted response is ‘false’. Children are known to have a tendency to agree or to judge sentences as true, especially when they are unsure of the correct answer (known as the PRINCIPLE OF CHARITY; Crain & Thornton 1998). This means that items for which a ‘true’ response indicates knowledge of condition C are not as reliable as those for which a ‘false’ answer indicates knowledge of condition C, because a ‘true’ response could arise either out of correct understanding of condition C or out of confusion over the test sentence. Let us now consider the two kinds of test items used and their possible truth conditions.

(12) PhiP item: [Dog] said that [Dog] won the competition.

DP item: [Dog CL cute] said that [Dog CL cute] won the competition.

Our test items are carefully constructed such that there are multiple possible readings of each sentence. Considering the PhiP condition first, the basic idea is that if condition C is violable, then the test sentence should permit a reading in which the nominal is coindexed with the first nominal. The key to these test sentences is that each nominal is ambiguous—there are two dogs, and the test sentence does not provide information as to which dog is being referred to. So a participant must make his/her decision about which dog is being referred to for each instance of ‘dog’ in the test sentence.¹³

Considering now the DP condition, in order to obtain the coindexed-reference reading, we needed two identical nominals that were both modified by a classifier. Because classifiers are felicitous in the presence of adjectives, adjectives were necessary in the story as well as in the test sentences. As noted earlier, every time a character was re-

¹³ An anonymous referee points out that on a specific reading of these nominals, the TVJT context is somewhat unusual in that there is no single unique referent that satisfies the properties of the adjective and noun. That is, in the example in the text, there is no single cute dog in the context (there are two cute dogs). We acknowledge that this is potentially infelicitous, on the specific reading. But as the referee also points out, this did not seem to have an impact on our experiment. Moreover, it is not a priori clear that children get the specific reading of classified nominals.

ferred to in the story, they were described with two adjectives (e.g. big cute dog). One adjective was shared between the two like characters (in this case, cute), and the other adjective differentiated between these two characters (in this case, big and small). Thus using these two adjectives, we could uniquely pick out one character (big dog), or the other character (small dog), or both of them (cute dog), all with a single adjective, which made the classifier felicitous. In the test sentences, we always used the shared adjective, since this created ambiguity (of the kind described above for PhiPs) as to the referent of any individual nominal. The same ambiguity obtains in the PhiP condition, without the need for the shared adjective, and so the PhiP and DP conditions are exactly parallel in this respect.

Turning now to the logic of the test items, when participants hear the first instance of 'dog' (either bare or modified by the shared adjective), referred to henceforth as DOG1, they may assume it refers to either the big cute dog or the small cute dog, and a priori we cannot know which any individual participant assumes. In fact, this does not even matter since the only important question is whether the second instance of 'dog', referred to henceforth as DOG2, can refer to the same dog. Irrespective of whether DOG1 refers to the big cute dog or the small cute dog, if DOG2 refers to the same dog, then we have a coindexed-reference reading, and if it refers to a different dog, then we have a disjoint-reference reading. Thus upon encountering each instance of 'dog' in this sentence, the participant must decide its referential value (giving rise to $2 \times 2 = 4$ possible readings), and we are investigating whether all four possible permutations are permitted by Thai adults and children. These four readings are summarized in Table 3.¹⁴

READING	DOG1	DOG2	REFERENCE
1	'big cute dog'	'small cute dog'	disjoint
2	'small cute dog'	'big cute dog'	disjoint
3	'big cute dog'	'big cute dog'	coindexed
4	'small cute dog'	'small cute dog'	coindexed

TABLE 3. Summary of the four possible readings for the PhiP test items.

Readings 1 and 2 are disjoint-reference readings where DOG2 refers to a different character from DOG1. These readings are consistent with condition C in that the two nominals are not coindexed. Readings 3 and 4 are coindexed-reference readings in which both DOG1 and DOG2 refer to the same dog in the story (either big cute dog or small cute dog).

Let us consider the truth of these four possible readings with respect to the sample story (see Table 4). Reading 1 (the big cute dog said that the small cute dog won) is FALSE in the story since the big cute dog said that the small naughty monkey won the competition. Reading 2 (the small cute dog said that the big cute dog won the competition) is also FALSE, since the small cute dog said that she herself won the competition (not the big cute dog). Reading 3 (the big cute dog said that the big cute dog won the competition) is also FALSE, since she said that the small naughty monkey won the competition, not herself. And finally, reading 4 (the small cute dog said that the small cute dog won) is TRUE, since the small cute dog objected and insisted that she herself won the competition. So in sum, only one of the four readings is true, and this is the one involving a coindexed reading. So if adults ever say 'true' to this test item, the only way to do so would be to allow a bound (coindexed and c-commanded) reading of the sec-

¹⁴ Such ambiguity to the English speaker is odd and marked, but to speakers of Thai (and other languages in which bare nominals arise freely), it is a normal part of everyday speech.

ond nominal—a supposed violation of condition C. If adults respond ‘false’ to such items, two of the three possible readings involve disjoint reference, but reading 3 involves coindexation. This is addressed by asking participants (adults and children) for justifications. If their justification indicates reading 3, a ‘false’ response reading is categorized as a coindexed reading (in reality, this never happened—false responses were always justified in ways that indicated disjoint reference; see below).

READING	REFERENCE	TRUTH CONDITION
1 (DOG1 → DOG2)	disjoint	false
2 (DOG2 → DOG1)	disjoint	false
3 (DOG1 → DOG1)	coindexed	false
4 (DOG2 → DOG2)	coindexed	true

TABLE 4. Summary of the truth conditions of each reading for the PhiP test items.

Together this provides precisely the experimental conditions we need to test our hypotheses. With this context, we are able to differentiate coindexed readings from disjoint readings, all while maintaining the exact-copy condition and providing felicitously used classifiers. See Tables 5 and 6 for the possible readings and their truth conditions for the DP test items.

READING	DOG CL ADJ-1	DOG CL ADJ-2	REFERENCE
1	‘big cute dog’	‘small cute dog’	disjoint
2	‘small cute dog’	‘big cute dog’	disjoint
3	‘big cute dog’	‘big cute dog’	coindexed
4	‘small cute dog’	‘small cute dog’	coindexed

TABLE 5. Summary of the four possible readings for the DP test items.

READING	REFERENCE	TRUTH CONDITION
1 (DOG1 → DOG2)	disjoint	false
2 (DOG2 → DOG1)	disjoint	false
3 (DOG1 → DOG1)	coindexed	false
4 (DOG2 → DOG2)	coindexed	true

TABLE 6. Summary of the truth conditions of each reading for the DP test items.

STIMULI. Our experiment consisted of two conditions (DP and PhiP) to which participants were randomly assigned. Each trial began with two training items, followed by two test items and four filler items (the test items and fillers were randomized). While each participant only saw two critical test items, we had a total of six critical test items that were distributed evenly across lists. There were six lists, three in the DP condition and three in the PhiP condition, where each list contained different critical test items. Post-hoc analysis of the results revealed no item effects, and so all results are henceforth reported in the aggregate. Of the four fillers, two filler stories used the competition-story format (but for which the test items were unrelated to condition C) and two used a different story format. Each participant was assigned to one of two groups and watched one list in which all items contained either DPs or PhiPs. Each list was balanced overall for match and mismatch items, and no list contained a sequence of more than two items together with like-target answers. Table 7 summarizes the items each group received (although the order was randomized).

PREDICTIONS. In the PhiP condition, we expect adults to respond variably. That is, when the nominals are invisible to condition C, nothing rules out a coindexed- or a disjoint-reference reading. Provided that the story does not bias participants toward one reading or the other, we therefore expect at least some participants to respond ‘true’

DP GROUP	PhiP GROUP
two training	two training
two DP items	two PhiP items
four fillers	four fillers
one control item	one control item

TABLE 7. Number and conditions of the test items, randomized.

with the mismatch items, since the coindexed reading is not ruled out by anything in the context or anything grammatical in the test sentence. In the DP condition, in which we expect condition C to apply, we expect the coindexed-reference reading to be impossible and the only permissible reading to be that with disjoint reference. We therefore expect a mix of true/false responses in the PhiP condition, but predominantly false responses in the DP condition.

RESULTS. The results are aggregated within groups and presented in Table 8 and Figure 1. As can be seen in the left column, participants were split in their responses to the PhiP mismatch items, although there was a slight tendency to prefer the disjoint reading. In the DP condition, however, participants overwhelmingly rejected the mismatch test item, indicating that disjoint reference was far preferred. The difference in rejection across conditions is statistically significant (Fisher’s exact, $p < 0.001$). Furthermore, upon inspection of the justifications participants provided, it was clear that adults rejected DP mismatch test items for the right reasons. Typical examples of justifications (translated from Thai) include things like ‘The big dog didn’t say that the small dog won’, and ‘No, the small dog said that self won’.

	PhiP	DP
True	32 (35.6%)	15 (8.7%)
False	58 (64.4%)	157 (91.3%)
TOTAL	90	172

TABLE 8. Adult responses in the PhiP and DP conditions.

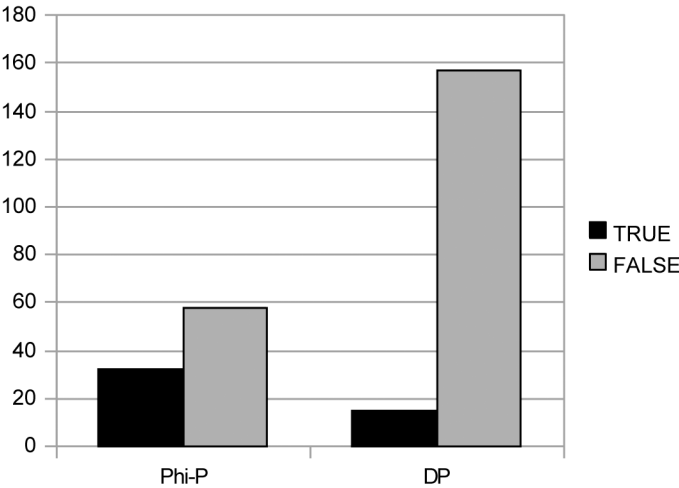


FIGURE 1. Adult responses to PhiP and DP test items in the mismatch condition.

These results are consistent with the predictions made by Larson’s theory of binding in Thai—that condition C is not applicable with PhiPs, but only DPs. In the next section, we investigate whether Thai children differentiate between the two types of nominals and whether condition C applies in child Thai.

3.2. EXPERIMENT 2: BINDING IN CHILD THAI.

PARTICIPANTS. We tested 135 native Thai-speaking children, of whom forty-two were excluded prior to the onset of the experimental test items for failing to respond appropriately to the training items. The remaining ninety-three children, aged 4;2 to 6;5 (mean = 5;3, $SD = 0.44$), completed the entire set of test items, but of these, fifteen are excluded from the results below on the basis of failing to respond to filler items appropriately. This leaves seventy-eight children for whom data are reported.

These seventy-eight children were tested on a variety of test-item lists composed of competition-type stories. Each list consisted of either one or two match items and one or two mismatch items, with a total of six different verbs used across the different lists. No child saw items with the same verb twice. Additionally, each list contained three filler items, and sometimes an additional control item (see below). Each list was randomly ordered and was balanced for ‘true’ and ‘false’ answers.

We conducted three different test sessions, each using different lists and test items. The test sessions were separated in time by many weeks. Some children were not available for all three sessions, so we have data from fewer than three lists for some children. As such, we report results by trial—a single session in which a child was tested on one list of items. We had a total of 147 trials.

From these 147 trials, a total of 221 PhiP and 113 DP items were tested, the imbalance arising simply out of the random nature of distributing children to each condition. A further eighty-four control items were tested, thirty of which are reported on below (the remainder were irrelevant to the current study).

GENERAL PROCEDURES. We tested children at the Kasetsart University kindergarten in a large room. The animations were projected onto a screen, creating an image that was approximately nine feet wide and five feet high. The sound was played from speakers that were placed just behind the children, who sat approximately four to five feet from the screen, with the bottom of the image just below their eye gaze. Children were very comfortable and generally enjoyed the experiment a great deal.

Children were tested individually, and were first introduced to two puppets, each worn by an experimenter. One puppet (the experimenter puppet, a baby lion) explained that the other puppet (the test puppet, a young monkey) was young and was trying to learn to talk properly, but she always made mistakes. The child’s help was enlisted to teach the test puppet. Children were typically very eager to help. The test puppet then said she was going to go into the projector and would watch from there. This was done so that the puppet could appear on the screen and we could then use prerecorded narration to present the test items. This maneuver was easily accepted by children, and was in fact quite amusing for them.

The test puppet then left the test area, and a few moments later the puppet appeared on the screen (using an animation predesigned for this purpose). The puppet waved, saying (roughly translated from Thai), ‘Look! Here I am! Let’s watch some fun stories now, okay?’. Many of the children at this point responded *khâʔ/khráp* ‘Okay (feminine/masculine)’. We used a total of nine training items, starting with very simple items, and slowly increasing in complexity until the final two training items were of approximately the same length and complexity as the actual test items. Only children who successfully completed the training procedure were included in the study.

The experimenter (with the experimenter puppet on her hand) sat next to the children at all times while they watched the videos, and during the test-items phase, asked the children (using the experimenter puppet) for a judgment on the test item, followed by a

justification. If a child was unable to provide a justification, several questions were asked to elicit one. Most children were able to provide some manner of justification. Those who consistently failed to justify their answers were excluded from the study. All justifications were audio recorded and also noted in writing by the second author, who was sitting nearby.

STIMULI. The exact same test items, animations, and audio narrations used to test adults in experiment 1 were used to test children. Including training and experimental items, each session lasted less than twenty-five minutes.

RESULTS. Beginning with the DP condition, Table 9 shows the results for match and mismatch conditions. Considering the match condition, of the sixty-five responses, fifty-nine were ‘true’, showing that when the ‘true’ response matches the disjoint-reference reading, children prefer to answer ‘true’. With mismatch items, however, of the forty-eight responses, thirty-six (75%) were ‘false’, showing that when the ‘true’ response matches the coindexed-reference reading, children override the principle of charity and respond ‘false’.

	MATCH	MISMATCH
True	59 (90.8%)	12 (25%)
False	6 (9.2%)	36 (75%)
TOTAL	65	48

TABLE 9. Results for children tested on the DP condition (indicates acceptance of match items but rejection of mismatch items).

If condition C were not present in the grammars of young Thai children, we would expect there to be no difference between the match and mismatch items. However, the difference between them is statistically significant (Fisher’s exact, two-tailed, $p < 0.001$). This therefore shows that condition C applies with DPs in child Thai just as it does in adult Thai.

Turning now to PhiP items (Table 10), of the fifty-six match responses, fifty-two were ‘true’. This shows that when the disjoint-reference reading matches what actually happened in the story, children have no problem responding ‘true’. This result is expected. In the mismatch condition, of the fifty-five responses, fifty-two were ‘false’. In this condition, the only reading that could be true is the coindexed one. The fact that 95% of the responses are rejections (overriding the principle of charity) shows that children did not access the coindexed-reference reading, but overwhelmingly interpreted the sentence on a disjoint-reference reading. Moreover, the justifications provided by children were consistent with disjoint reference.

	MATCH	MISMATCH
True	52 (92.9%)	3 (5.5%)
False	4 (7.1%)	52 (94.5%)
TOTAL	56	55

TABLE 10. Results for children tested on the PhiP condition (indicates acceptance of match items but rejection of mismatch items).

This result is somewhat surprising in that it differs from the results obtained in experiment 1 with adults. Recall that adults in the PhiP condition sometimes accepted the disjoint reading and sometimes the coindexed reading. Children, by contrast, seem to overwhelmingly prefer the disjoint-reference reading.

3.3. CONTROL ITEMS. In addition to these critical test items, we included a small number of control items as a measure of our stimuli. Because we excluded children who did

not perform well on the fillers, some data from control conditions were also lost, and as such, the number of trials per control condition are not constant. Furthermore, because of this, the amount of data does not rise to the level of significance, but we report these data nonetheless since they provide some interesting corroborative findings. We report here on control items of the following sort: (i) condition D, (ii) reflexive embedded subject, and (iii) null embedded subject.

CONDITION D CONTROL ITEMS. We tested items in which a nominal is bound by a pronoun—a configuration that violates Lasnik’s condition D (see §2.3 and n. 4). Such items are strongly ungrammatical in adult Thai,¹⁵ a fact that fits naturally with Larson’s theory of Thai nominals. A sentence like 13 is ungrammatical on the coindexed reading—the nominal *ajaan* ‘teacher’ is not a PhiP because there is no identical antecedent, and thus it cannot receive any features from its antecedent. This must therefore be a full DP, and as such, it is subject to condition C.

- (13) *kháw phûut wâa ?aacaan cà? chaná?*
 he say that teacher will win
 ‘He_i says that teacher_{*ij} will win.’

We tested such items (pronoun-nominal binding) using the same competition story truth-value judgment items. We had a total of thirty trials across PhiP and DP conditions, with sixteen trials being match items and the remainder being mismatch items.

Consider the story line described above in which a big, cute dog judges the monkey to have won, and the small cute dog objects, stating that she herself won the competition. At the end of this (mismatch) story, a control item was presented as follows.

- (14) Condition D test item
kháw phûut wâa mǎa/mǎa tua nâa-rák chaná?
 she say that dog/dog CL cute win
 ‘She said that dog/dog CL cute won the competition.’

Such items are strongly ungrammatical in adult Thai on the coindexed-reference reading, irrespective of nominal type (PhiP or DP). If children apply condition D, they are expected to reject such items. The results show that children generally did reject such items, and they did so in very similar proportions to the results reported above for condition C; see Table 11.

	MATCH	MISMATCH
True	15 (93.8%)	3 (21.4%)
False	1 (6.2%)	11 (78.6%)
TOTAL	16	14

TABLE 11. Results for children tested on the condition D control items (indicates acceptance of match items but rejection of mismatch items).

This shows that pronoun binding of a nominal disallows a coindexed-reference reading in a similar fashion to English as well as adult Thai pronominal binding.

PRONOMINAL EMBEDDED-SUBJECT CONTROL ITEMS. We included items in which the embedded subject of the test item is a pronoun, as in 15. The pronoun occurs in the embedded clause, and the antecedent is the subject of the main clause.

¹⁵ Indeed, pronoun-name binding is generally more strongly ungrammatical than name-name binding, as shown by, for example, Gordon and Hendrick (1997).

- (15) Embedded pronoun test item
 mǎa phǔut wǎa khǎw chaná?
 dog say that she win
 ‘Dog said that she won the competition.’

Given that pronouns are subject to condition B (and not C nor D), we expect such sentences to allow a coindexed-reference reading. However, a disjoint-reference reading is also allowed. The results show that children generally accepted items across both match and mismatch conditions, accepting twenty-nine out of thirty items. This shows two things. First, the power of the principle of charity is clearly on display here. If children are given an option to felicitously accept a test item, they will do so. Second, this shows that the scenarios we used were not biased in such a way that false answers were preferred in the mismatch condition and true answers were preferred in match conditions. That is, our scenarios were well balanced.

NULL EMBEDDED-SUBJECT CONTROL ITEMS. Thai allows subjects (and other arguments) to be optionally omitted, which allowed us to test items that included a null embedded subject, as in 16.

- (16) Null subject test item
 mǎa phǔut wǎa Ø chaná?
 dog say that Ø win
 ‘Dog said that Ø won the competition.’

We predict that the null subject works the same as a pronoun, and so we might expect acceptance of all items, both match and mismatch. The results are somewhat mixed in that while the overall tendency was to accept, there was more rejection of test items in the mismatch condition than expected (Table 12).

	MATCH	MISMATCH
True	16 (94.1%)	10 (71.4%)
False	1 (5.9%)	4 (28.6%)
TOTAL	17	14

TABLE 12. Results for children tested on the null subject condition (indicates acceptance of both match items and mismatch items).

We expected near-100% acceptance of all test items in both the match and mismatch conditions since the referent of the null subject is free and may refer to the matrix subject, or any other nominal in the scene. A sentence like ‘dog said that <null> won the race’ must be true under some reading of the null subject, and given children’s propensity to accept sentences, we expected all children to accept all items. The results, while based upon a very small number of trials, indicate that children readily allow the null subject to refer to the matrix subject, hence the 94% acceptance rate of the match items. Somewhat surprisingly, however, on four trials in the mismatch condition, children rejected the test item. Their justifications indicated that the null subject referred to the matrix subject in these cases. Given that null subjects are often coindexed with topics, this may have been because of the topicality of the matrix subject. The paucity of trials precludes a fuller discussion of this result, but suffice to say this shows that our materials did not favor the pattern of results obtained in the primary experiments with PhiPs and DPs.

REFLEXIVE EMBEDDED-SUBJECT CONTROL CONDITION. Finally, we included items with embedded reflexive subjects, on the assumption that this would force an obligatory coindexed-reference reading with the subject. We reasoned that with a reflexive embed-

ded subject, if the context allows a coindexed-reference reading, children would obligatorily opt for that reading.

- (17) Reflexive test item
- măa phûut wăa tua-ʔeeŋ chaná?
- dog say that CL-self win
- ‘Dog said that CL self won the competition.’

An unfortunate number of children who were assigned to lists that contained mismatch reflexive control items were excluded from the study for failure to correctly respond to fillers, so our data set for mismatch items is even sparser than for the other control items. Furthermore, the results, sparse as they are, suggest mixed responses, and not the clear-cut coindexed-reference reading that we were anticipating; see Table 13.

	MATCH	MISMATCH
True	13 (81.3%)	5 (62.5%)
False	3 (18.7%)	3 (37.5%)
TOTAL	16	8

TABLE 13. Results for children tested on the reflexive subject condition.

We speculate that this is because children seem not to have mastered the meaning of the lexical item *eng* ‘self’. This is not unexpected, since other studies on condition A in English (e.g. Chien & Wexler 1990) show that mastery of condition A is achieved around age 4;6–5;0. Many of the children in this study were of that age and may not have mastered the reflexive as yet.

3.4. EXPERIMENT 3: ENGLISH CHILDREN. We were concerned that the visual material used to test children might have in some way contributed to the results we report here, so we tested English-speaking children using the very same visual material. Three native English speakers were recruited to narrate the stories and the test items in exactly the same way as was done for the Thai material, and the very same videos were used for testing English-speaking children.

We tested fourteen English-speaking children (ages 4;2–4;11, mean 4;5), recruited from the University of Hawai‘i Child Care Center. The children were tested one by one either in a separate room, or at a small desk in the corner of the main playroom. The same training procedure and testing procedure were used, except the animations were not projected onto a wall, but were watched on a laptop computer. We did not include any control test items, but created lists that included four critical test items (two match and two mismatch) and four filler items (in addition to nine training items).

We could not test PhiPs versus DPs, since English does not exhibit this distinction,¹⁶ so we tested children on test items such as *the cute dog said that the cute dog won the competition* (adjective-modified noun), and *the dog said that the dog won the competition* (non-adjective-modified noun). The fourteen children were split evenly between these two conditions, and the results are presented in Table 14.

The results across the two conditions were not dramatically different. The match items were accepted by children on 27/28 trials (96%), and the mismatch items were rejected on 22/28 trials (79%). The difference between the acceptance of match items and

¹⁶ English does offer the option of a noun modified by an article (e.g. *the dog*) versus a proper-noun-like lexical noun (e.g. *Dog said that dog won the competition*), the latter being akin to a PhiP in Thai. We conducted a short judgment task with five native-speaking adults on the acceptability of the latter type of test item and found great variability. Given this, we decided not to test the proper-noun use of lexical nouns in English.

	ADJECTIVE-N CONDITION (‘the cute dog’)		N CONDITION (‘the dog’)	
	MATCH	MISMATCH	MATCH	MISMATCH
True	14	4	13	2
False	0	10	1	12
TOTAL	14	14	14	14

TABLE 14. Results for English children tested on adjective-noun and noun conditions of principle C competition stories.

rejection of mismatch items is to be expected, given children’s tendency to accept (principle of charity).

Most importantly, using the very same materials, we were able to replicate previous results on condition C in English. This, in combination with the various control conditions, shows that the materials were appropriate and balanced.

4. DISCUSSION. The results reported here reveal several important things about condition C in adult and child Thai, as well as informing us about whether condition C is innately specified in child grammar. First, we can say with confidence that condition C is not absent from the grammars of adult Thai speakers, contrary to previous reports and consistent with Larson 2005, as well as Lee 2003 and Jenks 2011. Rather, condition C appears somewhat occluded in that the structure of nominals gives the illusion that condition C is violable. We showed that when Thai adults hear repeated nominals that are unmodified by a classifier, they allow a coindexed-reference reading, in apparent violation of condition C. But when those same nominals are modified by classifiers, Thai speakers quite robustly reject the coindexed-reference reading, in conformance with condition C. This is consistent with the idea that condition C applies in Thai, but that bare nominals in Thai are structurally too small to be visible to condition C.

We considered three possible scenarios that might play out in how Thai children acquire their language. (i) Thai children violate condition C in all contexts, even those in which adult Thai speakers obey condition C (most consistent with a nonnativist position). (ii) Thai children conform closely to the pattern found in adult Thai (allow coindexation with bare nominals, but not when modified by a classifier)—a position that may be consistent with either a nativist or nonnativist position. (iii) Thai children obey condition C in all contexts, even those in which adult Thai speakers allow coindexation. Our experiments found support for the last of these three scenarios. This shows that Thai children are essentially doing what children in a variety of other languages have been shown to do—they obey condition C from the earliest testable ages. This is in line with general learnability considerations, in that Thai children appear to initially conform to the most restrictive grammar, only to extend that grammar on the basis of positive evidence. This lends credence to the idea that condition C is indeed universal, at least within child languages.

Let us briefly consider how some of the nongrammatical explanations for condition C mentioned earlier fare with these results. Pragmatic accounts of condition C (e.g. Grodzinsky & Reinhart 1993, Demirdache 1997), while garnering support from some facts in English, do not help us with the Thai data. While the pragmatic properties of a noun modified by a classifier are indeed different from unmodified nouns, there is no reason to think that these differences are relevant to binding. An anonymous referee suggests a version of a pragmatic approach in which specificity plays a role. Nouns that occur with classifiers tend to pick out specific (and likely unique) referents, and thus in the DP condition the Thai listener attempts to pick out two specific but unique individuals. This gives rise to the disjoint-reference reading, since with each classified nominal, the lis-

tener attempts to find a unique, different reference. In the PhiP condition, the two nominals do not occur with classifiers and may therefore be interpreted as nonspecific, and thus allow a coindexed-reference reading, essentially as a case of accidental coreference. Note that this amounts to a reversion to the notion that Thai does indeed violate condition C (in the PhiP condition). This is akin to the English sentence *A dog thinks a dog won the competition*, where accidental coreference is (marginally) available.

This view is unlikely to be correct, however. First, as a different anonymous referee points out, classified nominals in Thai do not pick out specific referents, but definite ones. Thus there is no semantic pressure to pick out different individual referents for the two nominals. Second, in order for this to account for the child data presented here, we would have to assume that Thai children treat all nominals, PhiP and DP alike, as specific. While this may be the case with DPs, it is unlikely that bare nouns are uniformly interpreted as specific by Thai children. There is some evidence that children acquiring languages in which definiteness/specificity are encoded on articles sometimes make errors with specificity (e.g. Schaeffer 1997), but there is no evidence that suggests that these children uniformly assume specific reference for nominals. More importantly, there is good evidence that children acquiring languages in which specificity is not encoded on articles have acquired (very early in development) both the concept of specificity and the ability to correctly mark specificity (see Avrutin & Brun 2001 for Russian; Deen 2006 for Swahili, and references therein). Thus the evidence in the literature does not support the notion that nouns are uniformly interpreted as specific by children. A pragmatic approach based upon the specificity of nominals thus fails to provide a satisfying explanation.

A very different approach to condition C is provided by Van Hoek (1995), who claims that condition C might be reduced to properties of referential phrases and general cognitive constraints. On this approach, which we dub the REFERENTIAL ACCESS APPROACH, condition C is essentially a semantic anomaly that arises when a contradiction in referential access occurs. Van Hoek invokes the commonly held view that full referential expressions are markers of low accessibility (i.e. full nouns are used when the referent is assumed to be relatively inaccessible in the mind of the interlocutor), and pronouns are markers of higher accessibility (i.e. used when the referent of the pronoun is thought to be more accessible to the interlocutor; Ariel 1990). The condition C facts in languages like English may be explained in the following way. When a full noun phrase is coindexed with a pronoun within a domain (roughly, a topical unit, referred as a *dominion*), this results in a semantic anomaly in that the full nominal is a marker of low accessibility while at the same time being a marker of higher accessibility (by virtue of its coindexation with a pronoun). Thus a sentence such as 6c (*He ate the hamburger when Smurf was inside the house*) is unacceptable because the pronoun establishes high accessibility, and the subsequent noun phrase *Smurf* (coindexed with the pronoun) is a marker of low-accessibility. Meanwhile, the corresponding sentence in which the linear order of the noun and pronoun are reversed (6a; *Smurf ate the hamburger when he was inside the house*) is acceptable because *Smurf* establishes the low accessibility of the noun, but the subsequent pronoun is acceptable because the previous mention of the full noun now makes the referent of the pronoun more accessible. This means that there is no incongruity in this latter case.

The referential access approach addresses many of the coreferential puzzles raised in the condition C literature in an elegant and appealing manner. Not only does it account for many of the facts that condition C does, but it also addresses several troubling phenomena raised in the literature over the years. Nonetheless, the referential access ap-

proach does not account for the data presented here. First, the exact-copy condition should not arise in any language. If the mention of a nominal raises its accessibility, then repeating that nominal should be incongruous, since full nominals are used only for low-accessibility referents (the very crux of the approach). Moreover, there is no principled reason why repeated bare nominals should be more acceptable than repeated modified nominals: both are repeated nominals, which violate the idea that accessibility and semantic incongruity are at the core of condition C violations.

While we reject the referential access approach, it represents a class of approaches to condition C (which cut across theoretical traditions) that attempt to reduce condition C to a combination of more primitive principles. The referential access approach does this by reducing condition C to a set of referential principles (importantly, these are processes that occur in domains of cognition outside of language), but other more formal approaches litter the landscape of modern minimalist thinking. Within the more neoteric generativist approaches to binding, it is common to reduce condition C to some other aspect of the computational unit (e.g. through particular properties of Merge; Kayne 2002, Zwart 2002, Hornstein 2009, Cecchetto & Donati 2010, among others), properties of the interpretive procedure (e.g. Schlenker 2005), or where the interpretive procedure takes place not within the computational unit, but at the CONCEPTUAL-INTENTIONAL INTERFACE (e.g. Hornstein et al. 2005). Others have reenvisioned the binding principles as instances of movement, and condition C as a case of movement that violates conditions on proper movement (e.g. Kayne 2005).

While none of these approaches has achieved any kind of critical mass of adoption within the field, they all stem from the same basic drive: to trim the stipulations inherent within older frameworks of generative grammar. In essence, these approaches characterize condition C as epiphenomenal, arising from the combination of other more basic properties of the language system, thereby eliminating the need for a stipulated condition. But crucially, from our vantage point, the properties that derive condition C are architectural features of the computational system itself, and not properties of cognition more broadly (like referentiality). Thus the question of whether condition C is a grammatical primitive (a PRINCIPLE, in older frameworks) or a derived grammatical principle (as in more modern treatments of condition C) remains within the purview of grammar proper. Condition C is not, as many have argued, a property of discourse, or pragmatics, or cognition more broadly. And so if condition C is indeed a derived principle along the lines of more recent approaches, the fact remains that the more basic properties of language that derive condition C (what we refer above to as the architectural features of the computational system) are purely linguistic, domain-specific, and part of the child's linguistic endowment from birth. The effect of this question (whether condition C is primitive or derived) on the import of our current findings is therefore negligible.

One thing that remains unclear is how and when Thai children converge on the adult grammar. We do not have any large-scale data to show at what age children treat PhiPs as structurally smaller than referential expressions and more akin to pronouns in either Thai or other languages. We tested four older children (eight, nine, twelve, and sixteen years old, respectively), all four of whom behaved like adults, suggesting that children acquire the relevant properties of Thai sometime between the ages of six and eight years. Crucially, the manner in which they reconfigure their grammar must conform with the learnability problem discussed earlier. Our results here show that Thai children initially assume the most restrictive grammar possible—one in which condition C applies across the board. An anonymous referee (correctly) points out that this might mean that children universally assume that nominals in their language are DPs, and not

PhiPs. From this, Thai children are able to determine (using positive evidence alone) that bare nouns allow the coindexed-reference reading. This is the trigger that allows them to reconfigure the analysis of nominals in their language: they reanalyze bare nominals as PhiPs instead of DPs, and this then permits the coindexed-reference reading with PhiPs, but preserves condition C with DPs. Thus the empirical facts we report here align perfectly with the logical reasoning of the learnability problem.

In sum, then, the evidence presented here shows that children acquiring Thai not only overcome the significant complexity of how condition C is exhibited in their language, but they also apply condition C to contexts in which it is never exemplified. And crucially, this application of condition C occurs in a fashion precisely predicted by the linguistic theory behind condition C. This remarkable fact can only be understood in light of condition C being present in the minds of children from birth and guiding children in their acquisition of the referential properties of their language. Our findings are therefore in immediate concordance with decades of research from the generative literature (Crain & McKee 1985, Crain 1991, among many others) showing that at least some aspects of child language are acquired with the aid of preexisting, domain-specific (linguistic) biases.

APPENDIX A: SCREEN SHOTS OF COMPETITION STORY



Intro: This is a story about four friends: big cute dog, small naughty monkey, small happy turtle, and small cute dog.



One day big cute dog has an idea ... 'Let's have a competition! And ...



... whoever wins ...



... gets this delicious orange!'



So they agree and walk over ...



... to a big rock and ...



... line up ready for the race.



First up is small, happy turtle.



She runs as fast ...



... as she can,



... but she is really slow.



Huff ... puff ...



Phew, she finished.



Next is small cute dog



Who is such a FAST runner!



She gets around so quickly.



Next is small naughty monkey



Who also runs so FAST.



And she gets around quickly too.



Now it's time for big cute dog to make her decision.



First is small happy turtle.
Judge: 'You tried, but you were slow, so you don't win.'
Turtle: 'I know, but thanks for letting me run—it was fun!'



Next is small cute dog.
Judge: 'You ran so well, but before I make my decision, I need to think about small naughty monkey, okay?'
SCD: 'Okay, that's fine, I'll just wait back here.'



Judge: 'Small naughty monkey, you ran so fast, and you were not even tired ... I've made my decision ... YOU win the competition!'



'Congratulations, YOU win the competition! Here's the orange.'



Monkey: 'Great, I'm glad you said that I won the competition.'



Just then, small cute dog objects.



SCD: 'Wait a minute! *I* won the competition! I ran the fastest, and so *I* won the competition.'



'I deserve the orange because I won the competition. So I am taking the orange.'



And so small cute dog takes the orange.



And that's the end of the story.



Hey puppet, can you tell us something about this story?



Puppet: 'Sure! That was a fun story ...



... about four friends ...



... big cute dog ...



... small naughty monkey ...



... small happy turtle ...



... and small cute dog ...



Hmm ... here's what I think ...
[test item]



(3 seconds later, puppet descends)



Final scene available for child to see while judging the puppet's sentence.

APPENDIX B: THAI VERSION OF THE SAMPLE STORY

[Introductory phase]

นี่เป็นเรื่องเกี่ยวกับเพื่อนทั้งสี่

nîi pen rûaŋ kiaw-kàp phǎan thǎng sîi
this be story about friend all four

'This story is about four friends.'

หมาน่ารักตัวใหญ่ ลิงซนตัวเล็ก

mǎa nǎa-rák tua yà yǐn son tua lék
dog cute CL big monkey naughty CL small

'big cute dog, small naughty monkey,'

เต่ารำเริงตัวเล็ก และหมาน่ารักตัวเล็ก

tǎw rǎa-rǎng tua lék lǎe? mǎa nǎa-rák tua lék
turtle happy CL small and dog cute CL small

'small happy turtle, and small cute dog.'

[Main story phase]

วันหนึ่งเพื่อนทั้งสี่อยู่ข้างนอก

wan nǐi phǎan thǎng sîi yǔu khǎaŋ-nǐwɔk
day one friend all four be outside

'One day all four friends are outside.'

หมาน่ารักตัวใหญ่เสนอให้พวกเขาแข่งขันกัน

mǎa nǎa-rák tua yà yǐn sanǎw hǎy phǔak-khǎw khǎeŋ-khǎn kan
dog cute CL big suggest that they compete together

'Big cute dog suggests that they have a competition.'

เธอเสนอให้มาดูกันว่าใครวิ่งได้เร็วที่สุด

thǎw sanǎw hǎy maa-duu kan wǎa khray wǐŋ dǎy rew thǎi-sùt
she suggest to see together that who run able fast superlative

'She suggests they see who can run the fastest'

และเธออาสาเป็นผู้ตัดสิน

lǎe? thǎw ʔaasǎa pen phǔu-tǎtsǐn
and she volunteer be judge

'and she volunteers to be the judge,'

โดยบอกว่า ใครก็ตามที่ชนะการแข่งขัน

dooy bǔwɔk wǎa khray-kǎw-taam thǎi chaná? kaan-khǎeŋ-khǎn
by say that whoever that win competition

'saying that whoever wins the race'

จะได้ส้มแสนอร่อยเป็นรางวัล

cà? dǎy sǔm sǎeŋ-ʔàrǔy pen raŋ-wan
will get orange delicious as prize

'gets a delicious orange as a prize.'

พวกเขาทั้งหมดตกลง

phǔak-khǎw thǎng-mòt tòk-lɔŋ
they all agree

'They all agree,'

และตกลงจะดูว่าใครวิ่งรอบหินก้อนใหญ่ได้เร็วที่สุด

lǎe? tòk-loŋ cá? duu wǎa khra wŭŋ rǔwɔp hín kǔwɔn yǎw dǎw rew thii-sùt
and decide will see that who run around rock CL big able fast superlative

‘and so they decide to see who can run the fastest around a large rock.’

ตัวแรกที่ลองคือเต่าร้างตัวเล็ก

tua rǎæk thii lǔwɔŋ khuu tàw rǎa-rəŋ tua lék
CL first that try be turtle happy CL small

‘First to try is small happy turtle.’

ซึ่งวิ่งได้ไม่เร็วมาก แต่ก็พยายามอย่างดีที่สุด

sŭŋ wŭŋ dǎw mǎy rew mǎak tǎæ-kǎ? phayaayaam yǎw-dii thii-sùt
who run able not fast very but try well superlative

‘who does not run very fast, but tries her best.’

ต่อมาคือหมาน่ารักตัวเล็ก

tǔw-maa khuu mǎa nǎa-rák tua lék
next be dog cute CL small

‘Next is small cute dog.’

ซึ่งวิ่งเร็ว และทำได้ดีมาก

sŭŋ wŭŋ rew lǎe? tham-dǎw dii mǎak
who run fast and do well very

‘who is a fast runner, and does very well.’

และสุดท้าย ลิงชนตัวเล็กวิ่ง

lǎe? sùt-tháay liŋ son tua lék wŭŋ
and finally monkey naughty CL small run

‘And finally small naughty monkey runs.’

และเธอก็วิ่งเร็วเช่นกัน

lǎe? thǎw wŭŋ rew chên-kan
and she run fast too

‘and she too is a fast runner.’

ตอนนี้ถึงเวลาที่หมาน่ารักตัวใหญ่ จะตัดสิน

tuwɔn-nii thŭŋ weelaa thii mǎa nǎa-rák tua yǎw cà? tàtsin
now arrive time that dog cute CL big will judge

‘Now it’s time for big cute dog to make a decision.’

เธอเริ่มตัดสินว่าเต่าร้างตัวเล็กไม่ใช่ผู้ชนะ

thǎw rǔm tàtsin wǎa tàw rǎa-rəŋ tua lék mǎy-chǎy phuu-chaná?
she begin judge that turtle happy CL small not winner

‘She first judges that small happy turtle was not the winner.’

และหันความสนใจไปที่หมาน่ารักตัวเล็ก

lǎe? hǎn khwaam-sǔncay pay-thii mǎa nǎa-rák tua lék
and turn attention to dog cute CL small

‘and then turns her attention to small cute dog’

และลิงชนตัวเล็ก

lǎe? liŋ son tua lék
and monkey naughty CL small

‘and small naughty monkey.’

เธอพูดกับหมาน่ารักตัวเล็ก

thǎw phuut kǎp mǎa nǎa-rák tua lék
she say to dog cute CL small

‘She says to small cute dog.’

เธอวิ่งเร็วมาก แต่ก่อนหน้านี้จะตัดสิน

thǎw wŭŋ rew mǎak tǎe? kǔwɔn chǎn cà? tàtsin
you run fast really but before I will judge

‘“You ran really fast, but before I make my decision,”

ขอฉันคิดก่อนว่าลิงชนตัวเล็กวิ่งได้ดีแค่ไหน

khǎw chǎn khít kǔwɔn wǎa liŋ son tua lék wŭŋ dǎw dii khǎæ-nǎy
let I think first that monkey naughty CL small run able well how-well

‘let me think about how well small naughty monkey ran.”’

หมาน่ารักตัวเล็กตกลงและถอยหลัง

mǎa nǎa-rák tua lék tòk-loŋ lǎe? thǎy lǎŋ
dog cute CL small agree and step back

‘Small cute dog agrees and steps back.’

หมาน่ารักตัวใหญ่จึงพูดกับลิงชนตัวเล็ก
 mǎa nǎa-rák tua yǎy cun̄ phǔut káp lɨŋ son tua lék
 dog cute CL big then say to monkey naughty CL small

‘Big cute dog then says to small naughty monkey,’

เธอวิ่งเร็วมาก และเธอไม่เหนื่อยเลย
 thəw wɨŋ rew mǎak láe? thəw mǎy nǎy lay
 you run fast very and you not tire at all

‘“You ran so fast, and you were not even tired at all,”

ดังนั้นฉันว่าเธอชนะการแข่งขัน
 daŋ-nán chǎn wǎa thəw chaná? kaan-khǎeŋ-khǎn
 so I think you win competition

‘so I think you won the race.’

นี่คือรางวัลของเธอ
 nǐi khǎm raan̄-wan khǔwŋ thəw
 here be prize of you

‘Here is your prize.’

ลิงชนตัวเล็กพูดว่า
 lɨŋ son tua lék phǔut wǎa
 monkey naughty CL small say that

‘Small naughty monkey says,’

ฉันดีใจที่ฉันชนะการแข่งขัน ขอบใจมาก
 chǎn dīi-cay thǐi chǎn chaná? kaan-khǎeŋ-khǎn khǔwŋ-cay mǎak
 I glad that I win competition thank-you much

‘“I’m glad I won the race. Thanks a lot.”’

ทันใดนั้น หมาน่ารักตัวเล็กคัดค้าน
 thanday-nán mǎa nǎa-rák tua lék khátkháan
 suddenly dog cute CL small object

‘Just then, small cute dog objects,’

นี่มันไม่ถูกต้อง
 nǐi nǎn mǎy thǔuk-tǔŋ
 hey that not right

‘“Hey, that’s not right!”

ฉันวิ่งเร็วที่สุด
 chǎn wɨŋ rew thǐi-sùt
 I run fast superlative

‘I am the fastest animal here,’

ฉันจึงสมควรได้ส้ม
 chǎn cun̄ sǔm-khuan dǎy sǔm
 I then deserve get orange

‘so I deserve the orange.’

ฉันชนะการแข่งขัน
 chǎn chaná? kaan-khǎeŋ-khǎn
 I win competition

‘I won the race.’

ลิงชนตัวเล็กพูดว่า
 lɨŋ son tua lék phǔut wǎa
 monkey naughty CL small say that

‘Small naughty monkey says,’

หมาน่ารักตัวใหญ่บอกว่าฉันชนะการแข่งขัน
 mǎa nǎa-rák tua yǎy bǔwǎk wǎa chǎn chaná? kaan-khǎeŋ-khǎn
 dog cute CL big say that I win competition

‘“Well, big cute dog said I won the race,”

แต่ฉันแบ่งส้มไม่ได้
 tǎe chǎn bǎeŋ sǔm dǎy ná?
 but I share orange able discourse.marker
 but I don’t mind sharing this orange.”’

หมาน่ารักตัวเล็กเอาส้มไปและพูดว่า
 mǎa nǎa-rák tua lék ɿaw sǔm pay láe? phǔut wǎa
 dog cute CL small take orange go and say that

‘Small cute dog takes the orange and says,’

ไม่ใช่ ดันชนะการแข่งขัน ส้มจึงเป็นของฉัน
 mây-chây chần chạná? kaan-khàeng-khăn sôm cun pen khwǎng chần
 no I win competition orange so be of I
 ‘“No, I won the race, so the orange is mine,”’
 และเธอก็เดินไปพร้อมส้ม
 lǎe? thǎo kǎi? dǎon-pay phrǎwom sôm
 and she then leave with orange
 ‘and she leaves with the orange.’
 และนี่คือตอนจบของเรื่องนี้
 lǎe? nǎn khun tǎon-còp khwǎng rǎan nǐ
 and that be end of story this
 ‘And that’s the end of this story.’
 เจ้าหุ่นมือ เล่าเรื่องนี้ให้เราฟังหน่อย
 cǎw-hùn-muu lǎw rǎan nǐ hǎy raw faj nòy
 puppet tell story this to we hear discourse marker
 ‘Hey puppet, can you tell us something about this story?’
 1. ศิณี นี่เป็นเรื่องสนุกเกี่ยวกับเพื่อนทั้งสี่
 dǎy sì nǐ pen rǎan sanúk kiaw-kàp phǎan thǎng sì
 sure discourse marker this be story fun about friend all four
 ‘Sure, this was a fun story about four friends.’
 เยอ ดันคิดอย่างนี้นะ...
 ʔǎo chǎn khít yǎan nǐ ná?
 Hmm I think way this discourse marker
 ‘Hmm, here’s what I think ...’

PhiP item:

หมาพูดว่าหมาชนะการแข่งขัน
 mǎa phǔut wǎa mǎa chạná? kaan-khàeng-khăn
 dog say that dog win competition
 [Dog] said that [Dog] won the competition.

DP item:

หมาตัวน่ารักพูดว่าหมาตัวน่ารักชนะการแข่งขัน
 mǎa tua nǎa-rák phǔut wǎa mǎa tua nǎa-rák chạná? kaan-khàeng-khăn
 dog CL cute say that dog CL cute win competition
 [Dog CL cute] said that [Dog CL cute] won the competition.

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