A BINDING-THEORETIC ANALYSIS
OF NAVAJO POSSESSOR YI-

by

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Abstract

This thesis examines possessor *yi-* in Navajo (Southern Athabaskan). Previous analyses deal with *yi-* mainly as a prefix attached to verbs and post-positions; in contrast to prior work, this thesis analyzes *yi-* as a possessor prefix (attached to nouns). I propose that possessor *yi-* is a disjoint anaphor (DA), as originally proposed by Saxon (1984a,1986,1995) for its cognate in Dogrib (Northern Athabaskan). As a disjoint anaphor it must have a local A-antecedent from which it is disjoint in reference. I show that *yi-* must also have an A'-antecedent with which it is obligatorily coreferent. I interpret the binding behavior of *yi-* in terms of (Aouns' 1985) theory of Generalized Binding. I claim that since it must simultaneously satisfy condition (as an A-anaphor) and C (since it must be A-free), *yi-* must crucially have two antecedents: an A'- antecedent with which it is coreferent, and an A-antecedent from which it is disjoint in reference. I show that for this relation to be licit, both antecedents (A' and A) must also agree in phi-features with *yi-*, which is inherently specified as third person singular.

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I'm thankful to my grandmother (Alice Begay Nez) who gave us every reason to speak with purpose. She told me that our sacred language came from White Shell Woman, and that no matter where I am as long as I speak my language, the gods would always recognize me.

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0.0. Introduction

In Navajo there are two 3rd person possessor prefixes, *yi-* and *bi-*. The best documentation of the usage of <u>possessor</u> *yi-* and *bi-* is in the work of Young & Morgan (Y&M)(1980, 1987). Both *yi-* and *bi-* attach to a noun base, to refer to the possessor of the noun (1a and b).

1)a.   bíchį́į́h, 'his nose'
             bimá, 'his mother'
  b.   yichį́į́h, 'his nose'
             yimá, 'his mother'

Bi- as a possessive pronoun exhibits the ability to refer independently. The definition of *yi-* seems more complex. *Yi-* as a possessor prefix is described by Young & Morgan (Y&M)(1987) as a prefix attaching itself to noun bases, and "**serves to distinguish between two nouns** either of which might otherwise be construed as the possessor".

In other words through the use of *yi-* or *bi-*, Navajo disambiguates between two third person possessors. The following data from Y&M (1987 p.9) are a minimal pair that illustrate the use of yi and bi:

1)a.   shínaaí shiłnaa'aash yimásáni yił yaa nát'áash
     1.poss.brother 1.poss.cousin 3-poss.grandmother 3.with 3.for 2.du.returned
     'my older brother$_i$ took my **cousin$_j$** back to **his$_j$ grandmother**'

  b.   shínaaí shiłnaa'aash bimásáni yił yaa nát'áash
     1.poss.brother 1.poss.cousin 3-poss.grandmother 3.with 3.for 2.du.returned
     'my older **brother$_i$** took my cousin$_j$ back to **his$_i$ grandmother**'[Y&M 1987]

The data in 1a/b) is a straightforward example of how the Navajo possessive prefix distinguish between two potential possessors with the use of yi, and *bi-*. In a) *yi-* prefixed to the NP 'grandmother' refers to the cousin as the possessor of the grandmother. In b) *bi-* refers to brother as the possessor of grandmother. Young and Morgan began their work on the Navajo language in 1937, and as a result produced among other publications, the most comprehensive work to date, The Colloquial Dictionary (1980, 1987) and Analytical Lexicon of Navajo (1991) with Sally Midgette. Other descriptions of possessor *yi-* and *bi-* are in Father Berard Haile's book Learning Navajo (1941). In his book, Father Haile documented yi as a possessor prefix, used primarily on kinship terms. However it is clear from Young and Morgan (1987) that yi is used with more than just kinship terms, including animals and proper names such as 'Mr. Little'.

Although extensive recent work has been done on Navajo *yi-* and *bi-* prefixed to verbs and post-positions, description of possessive *yi-* and *bi-* are limited to these earlier publications.

0.1.   Goals and outline of thesis

The goal of this thesis is to formalize Young and Morgan 's observations on the 3rd person possessor prefix *yi-*. This thesis proposes that Navajo *yi-*, unlike *bi-*, has the properties of both a pronoun and an anaphor. The main difference between the two prefixes is that *bi-* behaves like a pronoun, while *yi-* is an anaphor which must have an A'-antecedent with which it is co-indexed. Not only must *yi-* be an A'-anaphor, but

it must also be an A-type Disjoint Anaphor (DA), following Saxon's (1986) analysis

for its cognate in Dogrib (Northern Athabaskan)): that is, it must have an A-

antecedent from which it must be disjoint in reference. Hence, I propose that Navajo

yi- is subject to both Conditions A and C of Generalized Binding Theory (Aoun 1985),

while *bi-* as pronoun is subject to condition B.

0.2. Organization of thesis

The thesis is organized as follows: Chapter 1 provides a brief outline of Navajo

syntax, and a discussion of the Y&M data on possessor *yi-* and *bi-*. Included in

Chapter 1 is information on consultants. Chapter 2 discusses previous studies on *yi-*

(*yi-* and *bi-*). This chapter sets out necessary background by summarizing previous

analysis of *yi-*. These studies have primarily focused on yi as the third person object of

a verb, as opposed to possessor *yi*, which attaches to nouns. Hale (1973) analyzes

verbal *yi-/bi-* in terms of a process of Subject Object Inversion (SOI). This very

important study lays the groundwork for later analyses of *yi-* and *bi-*. Willie (1991)

argues for the pronominal argument hypothesis (PAH) by claiming that *yi-* and *bi-* are

pronominal arguments, and that overt NP's are adjuncts co-indexed with the

arguments. Speas (1988) analyzes *bi-* as a pronoun, and *yi-* as an agreement marker.

Other work on *yi-* and *bi-* includes Platero (1974,1982), and Perkins(1978).

Chapter 3 introduces and motivates Navajo *yi-* as a Disjoint Anaphor (DA), the main

proposal of the thesis. Original to this research is the proposal that *yi-* is subject to

both conditions A and C of Generalized Binding (Aoun 1985). Chapter 4 is a

discussion of 1st and 2nd person antecedents. I show that binding is disallowed by antecedents that are not specified for 3rd person singular; more specifically, *yi-* must have two antecedents and both must agree in phi-features. Chapter 5 compares the Navajo disjoint anaphor (DA) to disjoint anaphora in the Northern Athabaskan language Dogrib (Saxon 1984, 1986, 1995). In the final chapter (6) I conclude by summarizing the thesis and discuss briefly the implications of this research in terms of verbal *yi-*.

1.0. Outline of Navajo

Navajo, a Southern Athabaskan language, is spoken in the Southwest United States. The Navajo Nation extends into three states: what are now Northern Arizona, Western New Mexico and Southern Utah. The Nation's enrollment is more than 200,000. The Navajo Language like all native (First Nations) languages, is endangered. There are fewer speakers in each generation of Navajos. A short grammatical sketch of the language is given in Sec. 1.1.

1.1. Syntax

Navajo may be described as a radical head marking language. In head marking languages, grammatical relations are marked on the head rather than on a dependent of the head. (1a and b) illustrate head marking, where subject and object are marked on the verb by pronominal affixes. Note there are no overt nominal arguments.

1)a. shích'id
      1S.O+2S.S+stem
      'You are scratching me'

  b. nishch'id
      2S.O+1S.S+stem
      'I am scratching you'   [Y&M 1987p,64]

In Navajo, pronominal affixes are obligatory, and lexical DPs may be freely omitted. (2a/b) illustrate sentences with overt DP's. (2c) is a typical sentence where overt DP's are omitted.

2)a.   kii   bimá   'ayóí 'áyó'ní
       Kii poss.mother 3.3.loves
       Kii loves his mother

 b.   bimá   'ayóí 'áyó'ni
       poss.mother 3.3.loves
       He loves his mother

 c.   'ayóí 'áyó'ni
       3.3.loves
       He/she loves him/her   [Parsons, Speas 1994 p.15n.36]

Word order in Navajo is quite rigidly SOV. In other words, DP's are not freely ordered, so a sentence such as (3a) does not have the same interpretation as (3b):

3)a.   Mela Dugi yiyiiłtsą
        S   O   V
       Mela Dugi 3.3.saw
       Mela saw Dugi
       *Dugi saw Mela

 b.   Dugi Mela yiyiiłtsą
        S   O   V
       Dugi Mela 3.3.saw
       Dugi saw Mela
       *Mela saw Dugi

As a head final language, Navajo is characterized by post-positions rather than prepositions.

4)a.　　αshkii　at'ééd　y̲ichʼíʼ　yáłtiʼ
　　　　boy　　girl　　3.to　　3.S.talking
　　　　'The boy is talking to the girl' [Perkins 1978p.104]

1.2.　　Data and methodology

The first step in this research was to establish the consultant's judgement of possessive

yi- and *bi-*. What is important is that a speaker have consistent judgements. If a

speaker is not consistent or is unsure of the usage of *yi-* versus *bi-*, then complex data

would be more problematic. I initially re-elicited the following data from Young and

Morgan (1987), in order to establish a speaker's knowledge of the usage of *yi-* and *bi.*

This re-elicitation raised many interesting discussions about speaker intuitions. These

discussions continued to be crucial throughout the rest of the study. For example there

was a consensus that context was important: speakers would consistently offer some

context to the data in question. While *bi-* could be potentially ambiguous, *yi-* was

consistently judged to be unambiguous. It was surprising, however, that the youngest

speaker in the study (17 years) could not distinguish the use of *yi-* versus *bi-*.

In (5) there are 5 minimal pairs that show the usage of *yi-* versus *bi-*. Contra Haile

(1941) and Perkins (PC1989), the data show that *yi-* may refer not only the kinship

terms (1, 3,4) but also to animals (2) and proper names (5). The complete set of

minimal pairs in Y&M (1987:p9) contains two more sets of sentences with *yi-/bi-*

attached to animals and one with an inanimate noun 'house'. This confirms that yi is

not necessarily limited in the type of noun bases it can attach to.

5)1)a. shínaaí shiłnaa'aash yimásáni yił yaa nát'áash
        1.poss.brother 1.poss.cousin 3-poss.grandmother 3.with 3.for .3.du.returned
        'my older brother₁ took my cousin₁ back to his₁ grandmother'

   b.   shínaaí shiłnaa'aash bimásáni yił yaa nát'áash
        1.poss.brother 1.poss.cousin 3-poss.grandmother 3.with 3.for 3.du.returned
        'my older brother₁ took my cousin₁ back to his₁ grandmother'

5)2)a. gáagi dibé yázhi yíchį́į́h néiniłtash
        crow sheep little 3.poss.nose Rep.3.peck
        'the crow is pecking on the lamb's nose'

   b.   gáagi dibé yázhi bíchį́į́h néiniłtash
        crow sheep little 3.poss.nose Rep.3.peck
        'the lamb is tapping on the crow's nose'

5)3)a. shideezhí bimásání yighandi yił nát'áázh
        1.poss.sister 3.poss.grandmother 3.poss.house 3.with 3.du.return
        'My younger sister₁ took her grandmother₁ to her₁ home'

   b.   shideezhí bimásání bighandi yił nát'áázh
        1.poss.sister 3.poss.grandmother 3.poss.house 3.with 3.du.return
        'My younger sister₁ took her grandmother₁ to her₁ home'

5)4)a. shínaaí shimásání yiyéél yá néinígí
        1.poss.brother 1.poss.grandmother 3.poss.bundle 3.for 3.3.returned
        (inanimate)
        'My older brother carried my grandmother's bundle back for her'

   b.   shínaaí shimásání biyéél yá néinígí
        1.poss.brother 1.poss.grandmother 3.poss.bundle 3.for 3.3.returned
        (inanimate)
        i. 'My older brother carried my grandmother's bundle back for her'
        *(potentially ambiguous) ii.'My grandmother carried my brothers bundle back
        for him'

5)5)a. hastiin tso hastiin yázhí yilééchąą'í yits'ą́ą́' yiskah
        man big   man small 3.poss.dog 3.away.from 3.3.shot
        'Mr. Big shot Mr. Little's dog.'

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b.   hastiin tso hastiin yázhí biłééchąą'í yits'ą́ą́' yiskah
      man big   man small 3.poss.dog 3.away.from 3.3.shot
      'Mr. Big shot Mr. Little's dog.'
                                              [Y&M 1987 p.9]

I will show in this study how distinct *yi-* and *bi-* are in disambiguating potential

possessors in NP. This study is particularly important because it documents the

appropriate use of *yi-* as opposed to *bi-* amongst all the speakers. In the next

generation the number of speakers who can differentiate between a *yi-* sentence and a

bi- sentence may be zero.

The consultants in this study are from various backgrounds. All of them speak Navajo

as their first language and continue to use it as a primary language. The oldest speaker

speaks no English at all.

All examples in the text not specifically attributed to a particular author have been

checked with one or more of these speakers.

Consultants:

Alice (Begay) Nez   Born about 1907, dził nitsaa.

Married to Hatalhie Nez about 1925. Continues to maintain a small flock of sheep, a

farm and various winter and summer camps for horses and cattle. Typically she walks

about 2-3 miles a week and is constantly working on a new weaving project, usually

saddle blankets. Grandma Alice told me she had an opportunity to go to school at

about age 14 or 15, but was never interested.

Edith Simonson   Born about 1949 in Tse binit'aahotso. Educated to about

grade 8 from Gallup Jr.High School, Gallup, New Mexico. Today she helps maintain

the family sheep, cattle, horses, a cornfield and various winter and summer camps. She

has two adult children and 5 grandchildren. Four of five grandchildren are bilingual.

She is an accomplished beader and weaver.

Linda L.Henley   Born about 1947 in Tse binit'aahotso. Linda has a B.A in

Education and an M.A. in Special Education. Currently she works for Pinon

Elementary School in Pinon, Arizona. She returns to mothers residence (about 15

miles N.W. of Pinon) regularly so that she can help with farm, and livestock, and keep

her mother company. She has two children and one grandchild.

I also interviewed the following younger speaker in order to ascertain whether the *yi-

/bi-* alternation described in this thesis was being learnt by the younger generation of

Navajo Speakers.

Valencia Herder   Born in 1982 in Tuba City Arizona. Valencia is a student at

Flagstaff High School, Flagstaff Arizona. She returns home to her mother's home

regularly (about 120 miles N.E. of Flagstaff). She was raised with a strong Navajo

language background and maintains a high level of fluency; at what level is yet to be

determined. It is clear she understands complex conversation with minimal

clarification. She is interested in becoming literate in Navajo. Valencia's hobbies include beading and creating dance regalia.

The following speakers and speaker-linguists have had a tremendous influence on the data and analysis used in this research: MaryAnn Willie, Ellavina Tsosie Perkins, Lorene B. Legah, Lorraine Herder, Robert Young, Ken Hale.

Chapter 2

Previous Analyses of the *Yi-/Bi-* Alternation

2.0.   Introduction

Yi- and *bi-* are generally described as 3rd person pronominal prefixes. Both prefixes

may attach to a verb (1a and b), post-position (2a and b), or noun base (3a and b)[1].

<u>Verb</u>
1)a.   shiyáázh shash <u>yi</u>nálzid
           1.poss.son bear 3.3.fears
           'My son fears bears'

    b.   shiyáázh shash <u>bi</u>nálzid
           1.poss.son bear 3.3.fears
           'My son, the bear is afraid of him'

<u>Post-position</u>
2)a.   'awee' tsask'eh <u>yi</u>káá' sidá
           baby   bed 3.on   3.sit (animate)
           'The baby is sitting on the bed'

---

[1] Data such as the following in (ia) illustrate multiple instances of *yi-*, where *yi-* is attached to a verb, a post-position, and a noun. Although this is typical of *yi*, multiple instances of *bi-* are not possible. (i.b) is an attempt to attach *bi-* to the verb, post-position, and noun, and the result is ungrammatical. (i.c) illustrates *bi-* attached to both the noun, and the post-position, and still the sentence is odd at best. (i.d) is a grammatical sentence with *bi-* attached only to the noun.

i)a.   hastiin tso hastiin yázhí yilééchąą'í yits'áá' yiztał
          man.Big   man.Little · 3.poss.dog 3.from 3.3.Pf.kick
          'Mr. Big kicked Mr. Little's dog.   [adapted from Y&M 1987 p9]

    b.   hastiin tso hastiin yazzie bileecha'í bits'ąą biztał
    c.   hastiin tso hastiin yazzie bileecha'í bits'ąą yiztał
    d.   hastiin tso hastiin yazzie bileecha'í yits'ąą yiztał
          'Mr. Big kicked Mr. Little's dog'

b. 'asaa' tsé <u>bi</u>káá' si'ą́
   pot   rock 3.on 3.set (inanimate)
   'The pot is set on top of the rock'   [Perkins 1973, p.119:31]

<u>Noun</u>
3)a. shideezhí bimásání <u>yi</u>ghandi yił nát'áázh
     1.poss.sister 3.poss.grandmother 3.poss.home 3.with 3.du.Pl.returned
     'My younger sister took her grandmother to her home (sisters home)'

   b. shideezhí bimásání <u>bi</u>ghandi yił nát'áázh
      1.poss.sister 3.poss.grandmother 3.poss.home 3.with 3.du.Pl.returned
      'My younger sister took her grandmother to her home (grandmother's home)'
                                                            [Y&M 1987 p9]

2.1.   Previous Analyses of *Yi-* (*yi-/bi-*)

2.1.1   Passivization

The alternation of the third person pronouns *yi-/bi-* has been the focus of many studies

in Navajo syntax.   *Yi-/bi-* was described as an active/passive alternation in Reichard

(1951). In passivization, the subject gets demoted and the object gets promoted. One

implication of this is that an active transitive sentence becomes intransitive when

passivized. Passivizaton triggers demotion of the subject to an adjunct and promotion

of the object to subject, hence the change in word order from SOV to OSV. In the

data below (4a) is analysed as active while (4b) is passive.

4)a.   'ashkii at'ééd yiyiiłtsą́
                        boy girl 3-3.Pf.see   ACTIVE
                        'The boy saw the girl'

---

note that i(d) has exactly the same interpretation as i(a). Since this issue is orthogonal to the main topic of the
thesis, I leave it for future research.

b.   at'ééd 'ashkii biiłtsá
                    girl boy 3-3.Pf.see   PASSIVE
                    'The girl was seen by the boy

This description of *yi-/bi-* was quickly abandoned, since an independent detransitivized passive construction was discovered in Navajo, whereas the *yi-/bi-* alternation shows no evidence of detransitivization.

Later *yi-/bi-* was analyzed as obviative/proximate by Hale (1968). The NP closest to the verb is obviative (4a) if *yi-* is used, and the NP closest to the verb is proximate if *bi-* is used, as in (4b).

This analysis was only a precursor to Hale's later analysis of Subject-Object Inversion (SOI), which linguists continue to refer to as the 'landmark' analysis of *yi-/bi-*.

2.1.2. Inverse

In Inversion no demotion takes place. Instead the change in structure is due to the fact that the language is discourse sensitive (i.e. topic versus non-topic). Inversion often uses a nominal hierarchy, which has also been claimed to exist in Navajo.

<u>Hale</u>

Hale (1973) analyzes the *yi-/bi-* alternation in terms of Subject/Object Inversion (SOI). Simply stated, this involves the inversion of noun phrases, as well as a change in the third person object prefix on the verb, from *yi-* to *bi-*. Although the syntactic rule is similar to the passive construction, *yi-/bi-* constructions are transitive. In other

words, (4b) should be interpreted as either 'the boy saw the girl' or 'the girl, the boy saw her' instead of 'the girl was seen by the boy'. This can also be seen in the following where (5a) follows the basic SOV word order and (5b) shows OSV word order.

5)a.   łį́į́' dzaanééz yiztał
        horse mule   3-3.Pf.kick   DIRECT (SOV)
        'the horse kicked the mule'

   b.   dzaanééz łį́į́' biztał
        mule horse   3-3Pf.kick   INVERSE (OSV)
        'The mule was kicked by the horse'

It seems that subject-object inversion is a free option in simple sentences as the following sentences show:

6)a.   łééchąą' í mósí yishxash   (SOV)
   b.   mósí łééchąą'í bishxash   (OSV)
        'The dog *bi*-t the cat'

7)a.   'azee'ííł'íní 'ashkii yighádi'níłdlááád   (SOV)
   b.   'ashkii 'azee'ííł'íní bighádi'níłdlááád   (OSV)
        'The doctor x-rayed the boy'

However, the rule of SOI is not completely unrestricted. Although it yields well formed sentences in (7a and b) above, the following transitive sentences show that the rule is not entirely optional. In (8a and b) only the *yi*- form is grammatical.

8)a   'ashkii tó dilchxoshí yoodlą́ą́'   (SOV)
        'The boy drank the soda pop'

   b.   łééchąą'í łeets'aa' yiłnaaad   (SOV)
        'The dog is licking the plate'

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Hale points out that the inverted sentences corresponding to (8a and b) above (with *bi*-object marker) are unacceptable. The ungrammatical sentences are in (9a and b) below:

9)a   *tó dilchxoshí 'ashkii boodlą́ą́'   (OSV)

b.   *łeets'aa' łééchąą'í biłnaaad   (OSV)

At this point there are two possi*bi*-lities as to what restricts inversion. The condition might have to do with either (i), the noun phrases, or (ii), the verb. Hale concludes that inversion has to do with the noun phrases. Based on the data, transitive sentences with inanimate objects ('pop, plate' (8a and b)) cannot undergo inversion. It turns out that there are more conditions to the syntactic rule. The following data illustrate that in cases where the logical object is animate, the inverted word order is grammatical. The following data show the inverted order with the *bi-* prefix:

10)a.   shilį́į́' są́ biisxį́   (OSV)
        'Old age killed my horse'

b.   dibé tó 'abííł'éél   (OSV)
        'The water swept the sheep off'

In these cases, it is the SOV word order with *yi-* that is unacceptable. The unacceptable sentences are illustrated in (11a and b) below:

11)a.   *są́ shilį́į́' yiyiisxį́   (SOV)

'Old age killed my horse'

b.   *tó dibé 'ayíił'éél   (SOV)
     'The water swept the sheep off'

However the following sentences, using the same verbs as in (11 a and b), are

grammatical. Hale points out that this implies that it is not the verb which is

responsible for this behavior.

12)a.   náshdóítsoh bįįh yiyiisxį   (SOV)
        'The mountain lion killed the deer'

  b.   tó tsin 'ayíił'éél   (SOV)
        'The water swept the stick off'.

It appears that the condition on inversion has to do with animacy. That is, inversion is

not felicitous if the object is inanimate, and it is not required if the object is animate

(with the exception of 11a and b). To account for the ungrammaticality of (11a and b)

above, if the logical subject (or agent) is inanimate, and the logical object (patient) is

animate, then we must assume that SOI is obligatory. These generalizations are

summarized in table (13) below:

13)   **Subject**   **Object**   **Inversion**
      animate   animate   optional
      animate   inanimate   blocked
      inanimate   inanimate   blocked
      inanimate   animate   obligatory   [Hale 1973p.303]

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When both NP's are animate than inversion (*bi-*) is optional. If the subject NP is animate and the object NP is inanimate, then inversion is blocked. If both NP's are inanimate than inversion is also blocked. If the subject NP is inanimate and the object NP is animate then inversion is obligatory.

Animacy and Inversion

Hale observes that there is a correlation between animacy and inversion. However, compare the generalizations summarized in (13) with the following data. According to the table, only the data in (14) below should be possible with the inverted (*bi-*) form, that is, if we consider nominals such as 'lightning' and 'rain' to be inanimate. Instead, nominals such as 'lightning' and 'rain' behave as equal in rank with animates, i.e. people. In the data below either the direct form (SOV) in (15) or the inverted forms (14) are acceptable.

14)a. łį́į' 'ii'ni' b̲iisxį̲   (OSV)
      'Lightning kill the horse'

  b. shiye' níłtsą́ náb̲ístłéé'   (OSV)
       'Rain wet my son'

15)a. 'ii'ni' łį́į' yiyiisxį̲   (SOV)
      'Lightning killed the horse'

  b. níłtsą́ shiye' náístłéé'   (SOV)
      'Rain wet my son'   [Hale 1973]

The data thus far show that the conditions on inversion cannot be formulated in absolute terms. Hale concludes that the conditions may not be syntactic or semantic

but could be an aspect of Navajo thought, therefore beyond the control of non-native speakers of Navajo. Hale's systematic analysis of the *yi-/bi-* alternation continues to be one of the most referenced works on *yi-* and *bi-*.

A Note on Noun Hierarchies and Animacy

It is apparent that noun-type (i.e. animate versus inanimate) has something to do with the possibilities of inversion. Hale's work, amongst others, has led many researchers to postulate various animacy hierarchies (Frishberg 1972, Salego 1977, Wetherspoon 1977). In this type of hierarchy, nouns are ranked according to power, intelligence, movement etc. For example, Creamer (1974) postulates eight levels of rank, as illustrated in the following:

Group 1: human beings where infants are of lower rank than their elders, and high
          potency forces such as lightning are ranked equal to man.
Group 2: large and medium-sized animals with noted intelligence
Group 3: medium-sized animals
Group 4: small animals
Group 5: insects
Group 6: natural forces
Group 7: plants and inanimate objects
Group 8: abstractions

Other similar ranking systems have been proposed, but the fact is that not one hierarchy can be agreed upon. This is because tests of native speakers have been inconclusive.

This way of explaining the *yi-/bi-* alternation does not always predict the correct prefix.

I hypothesize that agentivity/control, and not an animacy hierarchy, is the key to explaining the *yi-/bi-* alternation. One of the generalizations that Hale (1973p.305) makes is that it might make more sense to rank nominals according to the extent in which that noun is capable of movement, activity, or causation. This would explain why 'lightning and rain' as inanimates rank as equals with animates. This reasoning makes more sense to me as a native speaker. Animacy hierarchies seem to rank entities according to a scale where some beings are inherently superior to others. This has been used to draw conclusions about how Navajos view the world. However, to my mind this view does not correspond to Navajo thinking. A more appropriate way of understanding the rankings is to view them relative to individual situations. For example, as 'níłtsą́', rain', water is capable of movement, activity and causation, whereas as 'tó, water as in a puddle' it is not. Ranking an entity according to its *abi-lity* to act on another or cause something is a fact of life: lightning can kill, and bees do sting. In this view a rigid noun hierarchy is eliminated, and each event is evaluated according to the agents and patients involved, in other words in terms of what <u>actually</u> happened instead of what someone else thinks <u>can</u> happen. I think <u>this</u> view coincides with Navajo thought rather than the notion that men rank higher than babys, sheep after horses etc[2]. Ranking smells to me of imperialism.

2.1.3. Grammatical Relations (GR) Mapping

<u>Perkins</u>

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[2] In conversation, sentences with two overt DPs are rare and awkward in Navajo. Therefore it should be noted that data with two DPs are independently somewhat infelicitous, further complicating the issue of animacy ranking between two DPs in the same sentence.

Perkins (1978) adopts Hale's (1973) analysis (with some modifications). However, she

points out that the principles set forth by SOI do not account for more complex

sentences such as those with indirect objects or post-positions, as the following

examples illustrate:

(16)a. Jáan hastiin asdzą́ yeiniłtį́
        John man woman 3-3.Pf.give(AN)
        'John gave the man the woman'

   b.   Hastiin jáan asdzą́ beiniłtį́
        man John woman 3-3.Pf.give(AN)
        'John gave the man the woman'

SOI would wrongly predict in (16a) that NP2 is the object and in (16b) NP1 is the

object. In both cases, however, they are the indirect object. Perkins rewrites the

principles from the point of view of the assignment of grammatical relations: i.e., where

NPs are assigned the relation of subject, object and indirect object. She sets out new

principles to deal with the *yi-/bi-* alternation. For full details, see Perkins (1978:ps111-

137). With these principles, Perkins can handle data with indirect objects; this seems to

be an improvement over SOI. However, these principles fail to account for many

other types of data.

In data with post-positionals, SOI seems to make the correct predictions, as seen in the

following sentences:

17)a. ashkii at'ééd yich'í' yáłti'
        boy girl to 3.Pf.talk
        'The boy is talking to the girl'

b.   at'ééd ashkii bich' į' yáłti'
        girl boy to 3.Pf.talk
        'The boy is talking to the girl'

However, as it turns out, SOI doesn't always make the correct prediction with post-

positionals. Perkins points out that SOI incorrectly predicts the *yi-* form in (18b).

18)a. awéé' tsé *bi -káá' tsits'aa' bił si'ą́
                   yi
        baby rock yi/*bi- top box with 3.set(IN)
        'The baby is in the box (set) on the rock'

b.   asaa' tsé *yi -káá' tsits'aa' bił si'ą́
                   bi
        pot rock *yi/bi- top box with 3.set(IN)
        'The pot is in the box set on the rock'

To deal with this problem, Perkins proposes another principle to deal specifically with

post-positions of location and direction.

Possessive phrases also display the *yi-/bi-* alternation. Perkins claims that *yi-* forms

uniformly mark the first NP as the subject and *bi-* forms uniformly mark the second NP

as the subject, whether they occur on verbs, post-positions, or nouns. This principle is

adequate for the following examples:

19)a. Hastiin Baa' yiłį́į' yizloh
        man Baa' Poss.horse 3-3.Pf.rope
        'The man roped Baa' s horse'

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b. Hastiin Baa' bilį́į́' yizloh
man Baa' Poss.horse 3-3.Pf.rope
'Baa' roped the man's horse'

However, as Perkins points out, it fails to account for the following data:

20)a. *Jáan Baa' yimá yishxash
John Baa' Poss.mother 3-3.Pf..bit
'John bit Baa's mother'

b. Jáan Baa' bimá yishxash
John Baa' Poss.mother 3-3.Pf.bi.t
'John bit Baa's mother'   [Perkins 1978]

In the cases above the principle incorrectly predicts that the second NP is the subject in

(20b); therefore Perkins concludes that "kinship possession is an exception" to the

principles.

Now if these principles are applied only to *yi-* on verbs (*yi*-V) then they make the

correct predictions: the first NP is the subject in both (20a and b). However, they

make the wrong predictions for possessives, as Perkins herself discovered. Instead we

must assume that possessive *yi-* and *bi-*, although related to *yi-* and *bi-* on verbs, are

used differently. Specifically, a possessor must be potentially ambiguous between two

NPs for *yi-* to be relevant (Y&M 1987p9). This is not the case in the data in (20a and

b); in other words, if (20a) were grammatical it would have the same interpretation as

(20b).

Platero

Like Perkins, Platero (1974, 1982) discusses the *yi-/bi-* alternation in terms of the interpretation of grammatical relations (IGR). In his analysis, *yi-* and *bi-* assign grammatical functions to the sentence arguments. As shown below, if the prefix is *yi-*, then NP $_b$ is Subj and NP $_a$ is the Obj, wheras the reverse order is applicable for *bi-*.

21)a. łįį' dzaanééz yiztał   (b)dzaanééz łįį' biztał
        horse mule   3-3.Pf.kick   mule horse   3-3Pf.kick
        'the horse kicked the mule'   'The mule was kicked by the horse'
        NP $_b$ NP $_a$ *yi*-verb   NP $_b$ NP $_a$ *bi*-verb

   IGR: [$_s$ Subj $_{ag}$ Obj $_{pat}$ *yi*-verb]   [$_s$ Obj $_{pat}$ Subj $_{ag}$ *bi*-verb]

Willie

Willie (1991) bases her analysis on Jelinek's (1984) Pronominal Argument Hypothesis, which I briefly introduce here.

The Pronominal Argument Hypothesis (PAH) is based on the empirical observation that the following two properties are often correlated cross-linguistically:

    i)   obligatory rich inflection

    ii)   optionally realized arguments (i.e. full DP's)

According to the PAH, these are analyzed theoretically as follows:

    a)   inflectional affixes are arguments

    b)   full DP's are adjuncts coindexed with the pronominal arguments

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The following trees illustrate the difference between a Lexial Argument language like English and a Pronominal Argument language (PAL);

22)English

```
         S
        / \
     NP/   \VP
          / \
        V/   \ NP
```

PAL

```
         S
        / \
     NP/   \S
          / \
       NP/   \S
            /\
    pronoun-pronoun -V
```

Following the PAH, Willie proposes that (*yi-/bi-*) are in argument position in examples like (23).

23)   yiyiiłtsą́
          3.3.saw
          'S/he saw him/her'

What *yi-* and *bi-* do is trigger the different mapping rules that specify how semantic roles are assigned to the pronominal argument positions.

Willie explains that nominal expressions are added to the structure not for grammatical reasons, but for discourse reasons. When there are overt nominals, then the subject and object NP are adjoined to the sentence and co-indexed with the "pronominal arguments".

Willie explains the *yi-/bi-* alternation in terms of a Direct and Inverse voice alternation. According to Willie, the closest NP to the verb is associated with the closest pronominal argument position to the verb. In the following sentence in (24a) yi, is assigned the agent theta role and is therefore the Subject pronominal argument , while the Object argument is assigned patient theta role. In (24b) with *bi-*, the theta assignment is reversed.

24)a.　łį̂į̂' dzaanééz yiztał
　　　 horse mule 3-3.kicked
　　　 'The horse kicked the mule'

　 b.　dzaanééz łį̂į̂' biztał
　　　 mule horse　INV.3-3.kicked
　　　 'The mule was kicked by the horse'　　　　　　　 [Willie (1991):71]

In the *yi-* form the inner nominal adjunct (*dzaaneez*, 'mule') is coindexed with the internal argument, and the outer nominal "by default" (*lii,*'horse) is coindexed with the external argument. The word order in (24a) is SOV, hence the Direct construction. In (24b) the NP occurring nearest the *bi-* is the agent adjunct of that sentence, and the other nominal is a patient adjunct. Willie concludes that in both voice forms the immediately preceding NP is an adjunct to the internal argument, regardless of theta role assignment. These nominals are in adjunct position, not in argument position. The noun does not have grammatical relations independently of the pronominal argument , that is nouns are adjuncts co-indexed with the "incorporated pronoun".

According to Willie, the inverse *bi-*, appears when there is more than one third person argument. The difference between Direct/Inverse and Active/Passive is that *yi-/bi-*

constructions are active sentences, so in other words the inverse is like a passive in that the subject has a patient theta role, but unlike a passive in that it has both agent and patient arguments, and thus remains a fully transitive construction. Therefore the *yi-/bi-* alternation is not an Active/Passive construction.

2.1.4. Pronoun v.s. Agreement

Speas.

Different to any other analysis is Speas' (1991) proposal that *bi-* is an incorporated pronoun and *yi-* is an agreement marker. She proposes that *bi-* is a pronoun which occupies the object position at D-Structure and is incorporated into the verb. Then the NP directly preceding the verb must be the subject. Accordingly, the first NP is dislocated, and associated with the *bi*-pronoun. This is what happens in an English sentence like (i):

i)   ' John, Mary saw him'.

Under this proposal, the sentences in (25a,b and c (i)) have the structure in (ii):

25)a. i. 'ashkii ’at’ééd biiłtsą́
    ii. 'ashkii$_i$ [’at’ééd bi$_i$ -iłtsą́]
      boy girl 3.- saw
      'The boy$_i$, the girl saw him$_i$'

  b. i. biiłtsą́
    ii. [pro bi -iłtsą́]
        3. -saw
    'Him/her, s/he saw'

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c. i. 'at'ééd biiłtsá
   ii. ['at'ééd bi -iłtsá]
       girl 3-3.saw
       'Him/her, the girl saw'   [Speas 1990 p261:102]

Speas claims that (25a) (which is a sentence with a *bi*-verb and two overt NPs) is like

left dislocation in English (see ex.(i)). The leftmost NP must be coindexed with the

pronoun *bi-*, in order to be licensed. In (25b) *bi-* occurs without an overt NP. In this

case *bi-*, the overt pronoun, receives an emphatic interpretation . In (25c) the overt

NP is the subject of the sentence while *bi-* is the object.

The following data in (26a - c) show that as an agreement marker, *yi-* does not itself

occupy an argument position. Therefore, the DP with which it is associated is in

argument position. When there is no DP, we assume the associated argument is pro.

26) a. 'ashkii 'at'ééd yiyiiłtsá
        boy girl 3.3.saw
        'The boy saw the girl'

    b. yiyiiłtsá
        3.3.saw
        'S/he saw him/her'

    c. 'at'ééd yiyiiłtsá
        girl 3.3.saw
        'S/he saw the girl'

Speas' analysis maintains that *yi-* and *bi-* have a different syntactic status, as opposed

to the other analyses, which all assume that *yi-* and *bi-* are syntactically parallel.

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2.2.   Towards a unified generalization

In this thesis, I will take a different perspective on the problem of how to unify the

various environments in which the *yi-/bi-* alternation occurs. Instead of beginning with

verb *yi-* and attempting to generalize to nouns, I will begin by providing the first

detailed analysis of nominal *yi-*, which will be presented in chapters 3 and 4. I will

return briefly to a comparison of possessive *yi-* with verb *yi-* in chapter 6.

Chapter 3

Proposal

3.0.   Introduction

I propose that *yi-* in Navajo is a disjoint anaphor, as originally proposed by Saxon for its cognate in Dogrib (Northern Athabaskan) (see Saxon 1984, 1985, 1986). As a disjoint anaphor, I will show that *yi-* must have a local A-antecedent from which it is obligatorily disjoint in reference. I will also show, however that *yi-* must have a second A'-antecedent with which it is obligatorily coreferent. I will interpret the binding behavior of *yi-* in terms of Aoun's (1985) theory of Generalized Binding. More specifically I make the proposal that *yi-* must simultaneously satisfy Condition A (since it is an anaphor) and Condition C (since it must be A-free).

I further claim that the anaphoric properties of the possessive pronoun *yi-* provide an argument that lexical DPs are in A-position, i.e. they are not adjuncts, as opposed to the claim of (amongst others) Jelinek (1984), Willie (1991). The properties of Navajo possessor *yi-* thus supply important evidence against the Pronominal Argument Hypothesis (PAH) Jelinek (1984). In contrast, I show that overt DPs in possessor positions occupy A'-positions, either as SPEC DP or adjuncts to DP[1].

---

[1] Although I use DP to refer to nominal, noun phrases etc, I remain neutral between the NP and DP analyses.

3.1. Possessive *yi-* must have an antecedent

In the following data, note the contrast between (1a) and (1b). The only difference between (1a), which is ungrammatical (if out of context), and (1b)[2], which is grammatical, is the absense vs. presence of an antecedent, *Joe,* for *yi-.* Therefore the generalization is that *yi-* cannot stand alone: it must be co-indexed with a nominal antecedent.

*(1a) yi-łįį' ya yizloh
       yi-horse 3.for 3-3.Pf.rope
       'he$_i$ roped his$_k$ horse'

(1b) Joe yi-łįį' yizloh
       yi-horse 3-3.Pf.rope
       'he$_f$ roped Joe's$_j$ horse'

The data in (2a) and (2b) establishes that this antecedent can be provided by the discourse context. (2b) is a possible response to (2a).

(2a) haayit'eego   Frank Joe yika'elwod
       Q.in.what.way Frank Joe 3.for/after.run
       'How did Frank$_f$ help Joe$_i$'

(2b) yi-łįį' yaa yizloh
       yi-horse 3.for 3-3.Pf.rope
       'he$_f$ roped his$_j$ horse for him$_j$'

---

[2] the interpretation [Joe$_i$ roped [his$_j$ horse]] is possible for some speakers. However this reading is hard to get. This is in contrast to Dogrib, where the reading is readily available (see chapter 5). I leave this issue for further research.

3.2. Licensing Condition #1: *yi-* must be A'-bound

How do we reconcile (1) and (2)?

We must force *yi-* to be co-indexed with Joe in order to explain the ungrammaticality of (1a) but at the same time allow this antecedent to be provided by the discourse context to explain the grammaticality of (2b).

This can be achieved if we make the assumption that *yi-* is obligatorily A'-bound and adopt Huang's (1984) proposal that discourse topics (e.g. Joe and Frank in (2a)) are syntactically represented as IP adjuncts A'-binding a pronominal, as shown in (2c):

(2)c.

discourse topic = pro$_f$

IP

yi-$_f$

Under this proposal:

(1a) is ungrammatical because *yi-* is not bound,

(1b) is grammatical because *yi-* is A'-bound by the possessor Joe, and finally.

(2b) is also grammatical because the discourse topic Joe is represented by a null topic, TOP, A'-binding *yi-*.

The structure of (1b) and (2b) are given below:

(1b)   Joe yi-łį́į' yizloh

IP
├── pro_f
└── VP
    ├── DP_h
    │   ├── Joe_j
    │   └── D'
    │   ├── D
    │   │   └── yi-_j
    │   └── NP
    │   └── łį́į'_h
    └── V'
        └── V
            agr_f agr_h.rope

(2b)   yi-łį́į' yaa yizloh

IP
├── pro_f
└── VP
    ├── PP_h
    │   ├── pro
    │   └── P'
    │   ├── P
    │   │   for_j
    │   │   (Joe_j)
    │   └── DP
    │   └── D'
    │   ├── pro
    │   │   yi-_j
    │   └── D
    │   horse_h
    └── V'
        └── V
            agr_f agr_h.rope

It is important to note that possessors must be in A'-positions (Spec DP or adjunct to DP) for this analysis to go through, as shown above.

3.3. Licensing Condition #2: possessive *yi-* cannot be A-bound

Let us turn to (2b), and look at all of its possible interpretations which are listed in (3).

Context repeated:

(2a) haayit'eego   Frank Joe yika'elwod
       'How did Frank$_f$ help Joe$_i$'

(2b) yi-łį́į́'   yaa yizloh
yi-horse 3.for 3-3.Pf.rope
'he$_f$ roped his$_j$ horse for him$_j$'

(3) a.*'he$_j$ (Joe) roped his$_j$ horse for him$_f$',

   b* 'he$_f$ (Frank) roped his$_f$ horse for him$_j$'

   c.*'he$_f$ roped his$_j$ horse for him$_k$'

   d. 'he$_f$ roped his$_k$ horse for him$_j$'

(3a) is an infelicitous response to the question in (2a). In the same way, 'He (Joe) roped his (Joe's) horse for him (Frank)', is not an appropriate response to, 'How did Frank help Joe?'. (3b) on the other hand is a plausible answer to the question (2a).

Why then is (3b) bad?

I propose that (3b) is ungrammatical because *yi-* (the possessor) is **A-bound** by pro$_f$ as shown in the tree diagram below:

(*3b) 'he_f (Frank) roped his_f horse for him_j'

```
                    IP
                  /    \
               pro_f    VP
                       /  \
                    PP_h   \
                   /  |     V'
                  /  P'    /  \
               pro  /\    /    \
                   P  DP  DP    V
                  for_j |         /\
                 (Joe_j          agr_f agr_h.rope
                      /\
                    pro  D
                    yi-_f  horse_h
```

(3c) is bad, like (3a); it is an infelicitous response to the question in (2a). (3d) is
impossible unless another third person is introduced. The easiest way to get this
reading is by answering, ' Kody yi-łį́į' yaa yizloh' to the question in (2a); in the case
the interpretation 'Frank roped Kody's horse for Joe' is available. Without mentioning
'Kody' overtly in the response, the reading is ruled out altogether. In short the ability
to get this type of interpretation depends heavily on the availability of appropriate
discourse antecedents.

Now let us turn again to (1b) and consider all its logically possible interpretations,
which are listed in (4).

(1b) Joe yi-łį́į' yizloh
         yi-horse 3-3.Pf.rope
         'he_f roped Joe's_j horse'

(4)a. 'he$_f$ roped Joe's$_j$ horse'

*b. 'Joe$_j$ roped his$_f$ horse'

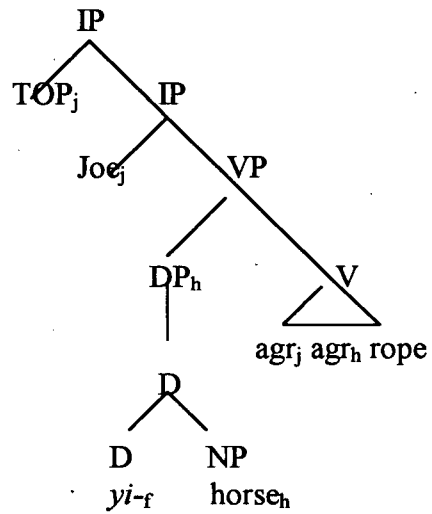*c. 'Joe$_j$ roped his$_j$ horse (=he$_j$ roped Joe's$_j$ horse)

(1b) can have only one possible interpretation, (4a), which is licit since *yi-* is A'-bound

by Joe. This is shown in the tree below.

(4a) 'He$_f$ roped Joe's$_j$ horse'

(1b) cannot have the interpretation in (4b), since *yi-* would be unbound, and *yi-* must

be A'-bound. This is illustrated in the following tree:

(*4b) 'Joe$_j$ roped his$_f$ horse'

```
              IP
             /  \
        TOP_j    IP
          |     /  \
        Joe_j  /    VP
              /    /  \
          DP_h    /    V
            |    /    /\
            D   /  agr_j agr_h rope
           / \
          D   NP
        yi-_f   horse_h
```

Crucially, (1b) cannot have the interpretation in (4c), although *yi-* in (4c) is A'-bound

by TOP.

Why is this interpretation ungrammatical?

Because *yi-* is A-bound by the subject Joe. This point is illustrated in the tree in (4c).

(*4c) 'Joe$_j$ roped his$_j$ horse.

```
              IP
             /  \
        TOP_j    IP
          |     /  \
        Joe_j  /    VP
              /    /  \
          DP_h    /    V
            |    /    /\
            D   /  agr_j agr_h rope
           / \
          D   NP
        yi-_j   horse_h
```

Hence, I conclude that *yi-* cannot be A-bound and must be A'-bound. Note: the proposal that (4c) and in particular (3b) are ruled out because *yi-* cannot be A-bound (by either pro in (3b) or Joe in (4c)) implies that lexical DPs (e.g. 'his horse') are in A-position.

3.4.   *yi-* must be A-free in any domain

Up to now, we have seen that *yi-* is like an anaphor since it has to have an antecedent, more precisely an A'-binder. However *yi-* must also be A-free. My next question is: *must yi- be locally A-free, like a pronoun* (that is, in its governing category the minimal domain containing *yi-*), or *A-free everywhere, like an R-expression?*. Consider the following sentence, where *yi-* is in a complement clause:

(5)   Paul yi-łį́į' yiyiiłtsą nizin
       Paul *yi*-horse 3.saw.3 3.thinks/wants
       'He$_i$ thinks Paul$_k$ saw his$_{*i/ *k/j}$ horse'.

Yi- must be disjoint from both the subject of the main clause and the subject of the subordinate clause. Note that there must be a topic present in the discourse to license *yi-*, as in (2) above. In contrast, the English sentence in (6) is ambiguous and can mean either:

(6a)   'He$_i$ thinks Paul$_k$ saw his$_k$ horse'. (Paul's horse)

  (b)   'He$_i$ thinks Paul$_k$ saw his$_i$ horse'.

  (c)   'He$_i$ thinks Paul$_k$ saw his$_j$ horse'

However, the Navajo sentence in (5) cannot have either meaning, (6a) or (6b). Instead (5) can only mean 'He thinks Paul saw someone's horse', where all DPs must have different indices, as shown in (6c). The fact that 'he' (matrix subject) cannot bind *yi*- shows that *yi*- in this complement clause is_like an R-expression_ : it must be free everywhere.

We have looked at data with the *yi*- in a complement clause. Now let us look at *yi*- in an adjunct clause. Examine the following question-answer pair[3]:

(7)a. Haa'íí biniina Dugi Mela bich'į'   baháchi'
       What reason.for Dugi Mela 3.towards. 3.angry
       'Why is Mela angry with Dugi?'

   b. yi-lééchaa'í yineez'į' -igii biniina bich'į'   baháchi'
       3.poss.dog   that.3-3.stole-clitic reason.for 3.towards 3.angry

         i) 'She is angry because he stole her dog.'

Literal translation: ii) 'He stole her dog that is why she is angry with him.'

The coreference relationship beween *pro* (she) and *yi*- (her) dog in (7b) might be construed as an A-binding relationship. However consider the literal translation of (7b) in (ii), and let us assume that the structure of (7b) is exactly as in its literal translation. Then (7b) will have the following structure:

---

[3] note that the response with *yi*- in (7b) was induced by the OSV (*bi*-) pattern in the question in (7a).

(8)

```
                    IP
                   /  \
                 /      IP
            TOPm       /
               NP     /
              /  \   /
            CP    N  IP
           /     fact  /
         IP      \    /        \
        proh  that prom        VP
              /              /      \
            VP             PP        V
           /  \          /   \      / \
         DP    V      pro.i towards agr.m angry
        / \   / \
    yi-m dog agr.i agr.d stole
```

Notice that there is no A-binding relationship between 'her dog' and 'she', since pro_m does not c-command yi-$_m$.

3.5. Summary

So far I have proposed that a yi- must satisfy conjointly conditions A and C of the Binding Theory. I derive the 2 licensing conditions governing yi- from the idea that yi- is an A'-anaphor and the proposal that as an A'-anaphor yi- must satisfy conjointly conditions A and C, of the binding theory, within the Generalized Binding approach of Aoun (1985). An informal statement of Generalized Binding is given below, together with the Navajo version I employ for Navajo.

Generalized Binding (where X = A or A')

A.   An X-anaphor must be X-bound in its domain

C.   R-expressions must be A-free

<u>Navajo Version</u>

An A'-anaphor must be A'-bound in its domain.

R-expressions must be A-free.

The A'-anaphor *yi-* must satisfy condition C, which requires that it be A-free, thus capturing licensing condition #2. It must also satisfy condition A, which it does by taking the A' value for X in A. Note that the only way it can satisfy conjointly condition A and C is if X = A'. Thus *yi-* is an A'-anaphor which must be A'-bound in its domain, thereby satisfying licensing condition #1.

The analysis is dependent on the assumption that DPs are in A-position, not in adjunct position. *Yi-* cannot be A-bound by the matrix null (pronominal) subject, as shown schematically below:

'he$_i$ roped his$_{*i/k}$ horse'

To capture this generalization we must assume that '*yi-łįį'*, 'his horse' is in argument position. Note, however, that the possessor must be an adjunct to DP, in order to allow the possessor to bind *yi-* in DP.

3.6. *Yi-* as a disjoint anaphor

We have seen that *yi-* is an A'-anaphor, and therefore must have an A'-antecedent and be A-free. However, there is another condition on *yi-* that we have not yet addressed. As shown in (2 and 7) *yi-* must have <u>two</u> antecedents; this does not follow from the analysis presented so far.

(9a) Hayit'éégo Joe hooghan-di nádzá
      How   Joe home-enclitic   3.Pf.return
      'How did Joe get home?'

 (b) * yilį́į' hooghan-di bił nádzá
      3.poss.horse home-enclitic 3.with 3.Pf.return
      'He rode home' (literally) 'His horse rode him home'

As we seen in (9) above, *yi-* is ungrammatical even though (i) there is an A'-antecedent (Joe) and (ii) *yi-* is A-free (since it occurs on a DP in subject position). Therefore, we need a third condition. Following Saxon (1984a.1986,1995) I propose that *yi-* is a disjoint anaphor as well as an A'-anaphor. That is, it must have two antecedents: an A'-antecedent with which it corefers, and crucially an A-antecedent from which it is disjoint. In chapter 4, I will further explore the implications of *yi-* as a disjoint anaphor.

3.7. Conclusion

The 3rd person prefix *yi-* in Navajo can attach itself to verbs, post-positions and nouns. In fact it is typical to see multiple instance of *yi-* in a single sentence. *Yi-* has been described and analyzed mainly in its role as a verbal prefix, and its function as a

prefix on nouns is less well known. In this chapter, I have presented a systematic

analysis of possessor *yi-*.

Chapter 4

Possessive Anaphora and 1st and 2nd person

4.0.   Introduction

We have already established that the 3rd person possessor prefix *yi-* is a disjoint

anaphor subject to both Conditions A and C of Generalized Binding Theory (Aoun

1985). *Yi-* must satisfy condition A (since it is an A' anaphor) and C (since it must be

A-free). *Yi-* cannot independently refer; it must be co-indexed with an overt A'-

antecedent, hence it is subject to condition A.   As a disjoint anaphor *yi-* must also have

an A-antecedent from which is is disjoint. *Yi-* can be properly bound by an antecedent

that is provided by the discourse, which we represent as base generated in an A'-

postion (Topic). So if there is no context, i.e. no overt or discourse antecedent, then

yi- is unbound and thereby yields an ungrammatical sentence, such as the following,

which is repeated from Chapter 3.

1).   *yilį́į' yizloh
       'he roped his horse'

In contrast, the context in (2) provides two overt third person DPs that license *yi-*. *Yi-*

is bound by an antecedent with which it can be co-indexed (grandfather) and one from

which it must be disjoint (brother), and the sentence is grammatical.

2).   shitsilí shichei yilį́į' yá yizloh
       1.poss.brother 1.poss.grandfather 3.poss.horse 3.for 3.3.Pf.rope
       'My younger brother roped my grandfathers horse for him'

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The following pattern summarizes the argument thus far: *yi-* is co-indexed with the nearest c-commanding DP in an A' position and is necessarily disjoint from a c-commanding DP. Note in an A-position, as shown in the schema below:

$$\text{A'} \qquad \qquad \qquad \text{yi}_i$$
$$3\text{rd}_i$$
$$\text{A}$$
$$3\text{rd}_j$$

4.1. Problem

4.1.1. 1st + 2nd person <u>disallows</u> anaphora

A potential problem arises in data where antecedents are provided by the discourse and *yi-* is still ungrammatical. The analysis predicts that (3 and 4) should be grammatical. *Yi-* in (3 and 4) has a plausible antecedent (Joe), yet given the context in (3a and 4a), (3b and 4b) are still bad[1]

3)a. Hayit'éégo Joe bika'eshwod 4)a. Hayit'éégo Joe bika'iinilwod
      How Joe 3-1.Pf.run.after(help)   Joe 3-2.Pf.run.after(help)
      'How did I help Joe'   'How did you help Joe'

---

[1] To be systematic, another possible pattern should be mentioned where the 1st person is the A'-antecedent for *yi-* and the 3rd person is the disjoint A-antecedent. The data in the following show that this is not a possible structure in Navajo. Instead the sentence 'Mela saw me' has pattern similar to (3 and 4) above.

(i)a. hayit'éégo mela shika'eelwod   (i)b. * yilíí' yizloh
       How Mela 1-3.Pf.run.after(help)   3.poss.horse 3-3Pf.rope
       'How did Mela help me'   'she roped my horse'

(ii)   shilíí' yizloh
       'she roped my horse'

In (i) *yi-* would have to have a 1st person A'-antecedent; however, it is inherently third person as shown in section 4.2.1. In (ii), I show a grammatical sentence with a first person possessor '*shi*'; this case is simply irrelevant to the issue under discussion.

b. * yilį́į' séloh   b. * yilį́į' siniloh
   3.poss.horse 1.3.Pf.rope   3.poss.horse 3-2.Pf.rop
   'I roped his horse'   'You roped his horse'

Compare (3) and (4) with (5), which is grammatical. Note that the only difference

between (3) and (4) on the one hand and (5) on the other is that the latter has two

third person DPs as potential antecedents, while (3) has a third and a first person

antecedent, and (4) has a third and a second person antecedent.

5)a.   Mary John yiyiiłtsą́
      Mary John 3.3.Pf.see
      'Mary saw John'

b.   yilį́į' yá yizloh
      3.poss.horse 3.for 3.3.Pf.rope
      'she roped his horse for him'

Why does a first or second person[2] antecedent disallow anaphora with *yi-*? The data in

(3) and (4) meet the requirements for binding: *yi-* is bound by the nearest c-

commanding A'-antecedent, and obligatorily disjoint from another c-commanding DP

in an A position. This is a problem because the analysis we've proposed so far will not

rule it out; there is an A'-antecedent 'Joe', and an A-antecedent which is disjoint from

'Joe' and the sentence is still bad.

The ungrammatical patterns are schematized in the following diagram. Although *yi-* is

provided with a third person antecedent with which it may be co-indexed, the first

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person antecedent disallows any binding relationship. The pattern below yields an ungrammatical sentence.

$$A$$
$$*1st_j$$

$$yi\text{-}_i$$

$$A'$$
$$3rd_i$$

4.1.2. Plural antecedents disallow anaphora

Now compare the data in (6) and (7), which illustrate the difference between plural DP's and singular DP's as possible antecedent for yi. In (6a) the context provides a plural NP, *'at'eeké,* 'girls', as well as a third singular DP, 'Mela'. The sentence in (6b) is ungrammatical with the given context in (6a). The data in (7) is familiar, both DP's are third person singular, 'Mela', 'Dugi', and this sentence is good.

Context:
6)a.   at'eeké Mela yiyiiłtsą́
         Pl.girl Mela 3.3.Pf.see
         'The girls saw Mela'

  b.* yilį́į́' yá yizloh
         3.poss.horse 3.for 3.3.Pf.rope
         'They roped her horse for her'

Context:
7)a.   Mela Dugi yiyiiłtsą́
         Mela Dugi 3.3.Pf.see
         'Mela saw Dugi'

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b.   yilį́į́' yá yizloh
     3.poss.horse 3.for 3.3.Pf.rope
     'she roped his horse for him"

4.1.3.   *Yi-* cannot have a first, second or plural antecedent

We have seen how a first, second or plural antecedent cannot license *yi-*. Let us now

turn to sentences where only a first, plural and second person antecedent are provided

to (8i) (a), (b), and (c) respectively. These cases are bad. Note that in order to force a

first or second person to be an antecedent to *yi-*, I have employed independent

pronominal adjuncts, which lead the sentences to be somewhat odd in the first place.

The sentences in (ii) are acceptable however, here the possessor agrees with the adjunct

pronominal, in contrast to the cases in (i).

8)a. *(i)shí , yilį́į́' séloh   c. *(i) ni , yilį́į́' siníloh
        1.S. 3.poss.horse 1.3.Pf.rope   2.S. 3.poss.horse 2.3.Pf.rope

       'I ,I roped his horse'   'You , you roped his horse'
   (ii) Shí, shilį́į́' séloh   (ii) ni, nilį́į́' siníloh
        'I, I roped my horse'   'You, you roped your horse'

   b.*(i)nihí, yilį́į́' siidloh
        1.du.Pl. 3.poss.horse 1.du.Pl.3.Pf.rope
        We, we roped his horse'
      (ii)nihí, nihilį́į́' siidloh
         'We, we roped our horse'

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The data in (8 and 9) are <u>uniformly bad</u>, with or without context, showing that *yi-* can only be licensed in a sentence containing two third persons[2]. This is schematized in the following diagram:

$$*[1st/2nd.]_k \qquad yi_{-i}$$
$$* \ 3rdPl_i \qquad yi_{-i}$$

4.1.4. Generalization

Recall that *yi-* must have an antecedent that is in A' position. This antecedent can be provided by the discourse. The problem arises with the data in 4.1.1 ((3 and 4) (3) is repeated below:

(3 rep.)   Hayit'éégo Joe bika'eshwod, . . . * yilį́į́' séloh
                'How did <u>I</u> help <u>Joe</u>, . . . I roped his horse.

Here, two plausible antecedents are provided for *yi-* : a first <u>and</u> a third person, yet the sentence is still ungrammatical. In other words *yi-* is blocked from being bound. In 4.1.2 (6), a third <u>plural</u> and third person singular antecedent are provided for *yi-*, and the sentence is also bad. We have also seen in 4.1.3 (8) that a first, second or plural

---

[2] The sentences in (9a,b) and (c) below are ungrammatical. (9a) involves a first person pronominal arguments, (b) involves a plural pronominal, and (c) involves a second person pronominal. Following the proposal for *yi-*, they can be ruled out for the same reason that (1) ia bad. *Yi-* is not bound, and *yi-* must be bound.
No Context:
(9)a. * yilį́į́' séloh   c. * yilį́į́' ·siníloh
        3.poss.horse 1-3.Pf.rope   3.poss.horse 2-3.Pf.rope
        'I roped his horse'   'You roped his horse'

   b. * yilį́į́' siidloh
        3.poss.horse 1du.Pl.-3.Pf.rope
        'We roped his horse'

nominal cannot itself antecede *yi-*. (9) shows that the only grammatical structures are where the A'-antecedent and the disjoint A-antecedent are both third person singular. This generalization is schematized below:

A'
3rd$_j$

yi-$_i$

A
3rd$_i$

4.2. Solution

4.2.1 Sub-solution: *Yi-* is inherently 3rd person singular

The ungrammaticality of (8) and (9) can be accounted for if we say that *yi-* is inherently third person <u>singular</u>. This means that *yi-* <u>cannot</u> have an antecedent which does not agree with it in phi-features. Data such as (7), which provide a 3rd person antecedent for *yi-* are grammatical because the antecedents provided agree with *yi-*'s phi-features. Therefore the ungrammatical data can be ruled out due to agreement, i.e. *yi-* does not agree in person with a first or second person antecedent or in number with a plural antecedent. In (10), I repeat (8 a,b, and c) with phi-indices.

10)a. *<u>shí</u> yiłį̹į̹' séloh   *1st   *yi-* (=3)

    <u>'I</u>, I roped his horse

  b. * <u>nihí</u> yiłį̹į̹' siidloh   *1st.du.Pl.   *yi-* (=3)
     '<u>We</u>, we roped his horse'

  c. * <u>ni</u> yiłį̹į̹' siníloh   *2nd   *yi-* (=3)
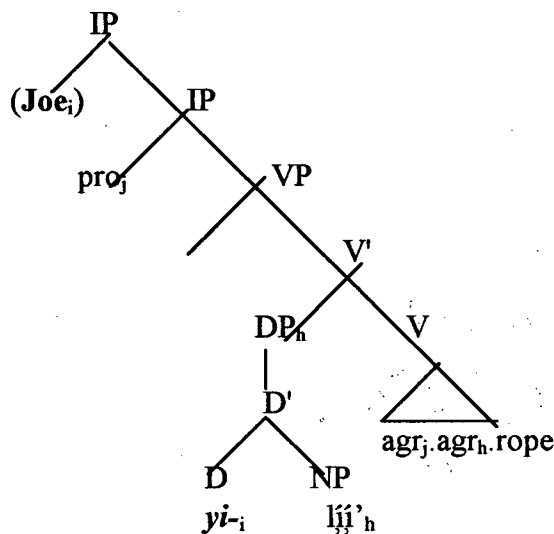   '<u>You</u>, you roped his horse'

4.2.2. Summary of the Problem

However, our claim that *yi-* is inherently specified for third person singular doesn't

adequately explain why a first, second or plural disjoint antecedent should block

anaphora with *yi-*; that is, why a nominal with different features blocks coindexation

even when it is referentially <u>distinct</u>. Such is the case with the data in (3) and (4) and

(6).

$$A'$$
$$3rd_i$$
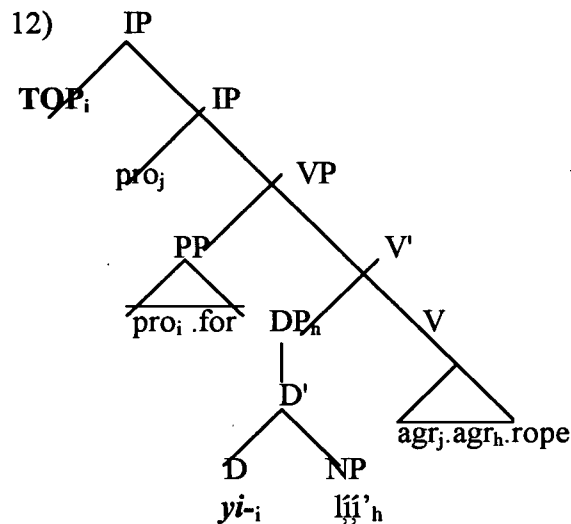$$yi\text{-}_i$$
$$A$$
$$*1st/2nd/\ plural_j$$

The following tree in (11) illustrates the ungrammatical sentence in (3). Even given

the context in (a) 'How did I help Joe', the response in (b) 'I roped his horse' is not

possible in Navajo with *yi-* as the possessor prefix. The antecedent provided is in an

A'-position, just as required by the licensing condition given in Chapter 3.

(11)a. Hayit'éégo Joe bika'eshwod   b. *yilį́į' séloh

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In contrast the tree in (12) from (5) illustrates that *yi-* when provided with two third person DPs as antecedents, is in a licit binding relationship. With the context *'Mela Dugi yiyiiłtsą́,* 'Mela saw Dugi' . . . *yiłį́į́' yá yizloh',* 'she roped his horse for him', is grammatical.

12) IP

TOP$_i$ IP

pro$_j$ VP

PP   V'

pro$_i$ .for   DP$_h$ V

D'

D   NP   agr$_j$.agr$_h$.rope

yi-$_i$ łį́į́'$_h$

To summarize all the relevant points, the data in (1) and (2) confirm our proposal that *yi-* must be A'-bound, and that the antecedent must be provided either overtly or in the discourse. This was discussed in detail in chapter 3, where yi is analyzed as a disjoint anaphor subject to both conditions A and C simultaneously.

We have also seen that *yi-* cannot take a plural or first/second person antecedent, but this can be accounted simply if we conclude that *yi-* is inherently <u>3rd person singular</u>. Our theory accounts for the fact that *yi-* must be provided with a third person singular antecedent, (as in 5) and (7). Only in constructions where a non-coreferent first, second person or plural DP intervenes between *yi-* and a third person antecedent as in

(3), (4) and (6) is there a problem. To reiterate this point, the following pattern is not possible:

(iii).   A'
                   *3rd$_i$
                   'John'
                                                    yi-$_i$
                   A
                   *1st/2nd$_j$ plural$_{j/k/J}$

4.2.3. Solution: Disjoint Antecedent

Because *yi*- is inherently specified for third person singular phi-features, its A'-antecedent must agree with it in phi-features. We have seen that the A'-antecedent for *yi*- must also be third person singular. But crucially, let us now propose that *yi*- must also agree with its (disjoint) A-antecedent. This immediately explains the ungrammaticality of the pattern in (iii). *Yi*- must agree with both antecedents: it must be contra-indexed with its A-antecedent, and it must be coindexed with its A'-antecedent.

(iv).   A'
                 3rd$_i$ ◄─────────┐
                                    │
                                    │ *yi*-$_i$
                 A   │
                 3rd$_j$ ◄─────────┘

We will represent this relationship formally by adopting the indexing schema proposed by Huang & Tang (H&T) (1991). H&T propose that anaphoric relationships be

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represented using two different sets of indices, one for phi-features and one for coreference. They represent phi-feature by (phi-(i,j,k, ...)) and referential indices by (R-(1,2,3, ...)). Thus, in a simple relation of coreference, the antecedent will have the same phi-feature indices and referential indices as the anaphor.

(v).   John (phi-(i),R(2)) hurt his(phi-(i), R(2)) foot.

H&T further suggest that the assignment of referential indices is dependent on the matching of phi-feature indices. We can adopt this idea simply for the Navajo case under consideration. Since *yi-* is inherently specified for third person singular, any potential antecedent, either disjoint or coreferent, must agree with it in phi-features in order for a referential dependency (either coreferent or disjoint) to hold. Thus both the coreferent A'-antecedent and the disjoint A-antecedent for *yi-* must be specified as third singular, as shown below.

(vi).   A'   A   *yi-*
     (phi-   (i)   (i)   (i))
     (R   (2)   (not 3)   (2))

(13) illustrates how this works. In the following sentence *yi-* agrees with both 'Mela' and 'Dugi' in phi-features. *Yi-* corefers with 'Dugi' its A'-antecedent and is disjoint in reference from 'Mela' its A-antecedent

(13)   Mela Dugi yiyiiłtsą . . .yiłįį' yá yizloh
        Mela$_{(phi-(i),R(2))}$ Dugi$_{(phi-(i),R(3))}$ yiyiiłtsą . . .yi$_{(phi-(i),R(3))}$łįį' yá yizloh
        'Mela saw Dugi . . . she roped his horse for him'

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The next data in (14) (repeated from 3) illustrate a case where *yi*- does not agree with

its A'-antecedent. The A-antecedent 'Joe' agrees with it in phi-features, yet this is

insufficient since <u>both</u> the A-antecedent (first person *pro*) and the A'-antecedent must

agree with *yi*-.

(14) * Hayit'éégo Joe bika'eshwod, . . . yilį́į' séloh
      Hayit'éégo Joe $_{(phi-(i), R(1)}$ bika'e<u>sh</u>$_{(phi-(j),R(2)}$ wod, . . .yi$_{(phi-(i), R(0)}$ •2/•1 lį́į' séloh
      'How did <u>I</u> help <u>Joe</u>, . . . I roped his horse'

4.3   Conclusion

In this chapter, I have shown that the analysis of *yi*- as a disjoint anaphor together with

the independently supported assumption that *yi*- is inherently specified as third person

singular, account straightforwardly for the fact that *yi*- is only licensed when **both** its

A'-antecedent and its (disjoint) A-antecedent are specified as third person singular. I

have employed the dual indexing mechanism proposed by Huang & Tang (1991) to

give a formal account of the phi-feature restriction on binding of *yi*-. It is important to

point out that the behavior of *yi*- with first, second person and plural A-antecedents

provides important supporting evidence for the disjoint anaphor analysis of *yi*-, since

without this analysis it is quite mysterious as to why a non-coreferent DP would have

an effect on *yi*- binding.

Chapter 5

Disjoint Anaphora in Dogrib: A Brief Comparison with Navajo

5.0. Introduction

Dogrib and Navajo each have a set of cognate morphemes that developed from proto-Athapaskan *ye-* and *we-* (Thompson 1991). These are *ye-* and *we-* in Dogrib and *yi-* and *bi-* in Navajo. As with Navajo *yi-*, Dogrib *ye-* attaches to verbs and post-positions as well as nouns. In the following however, we will limit our comparison to *yi-/ye-* on nouns. For reasons of comparison, I also include the pronominals *bi-* and its cognate *we-*.

In Dogrib *ye-* has been analyzed as a disjoint anaphor (DA) (Saxon1984a, 1986,1995). This means that *ye-*, just like *yi-*, must be in an A-binding relation with an antecedent from which it is disjoint in reference. Saxon has analyzed Dogrib *we-*, like Navajo *bi-*, as a pronoun subject to condition B.

In the following data we compare the Dogrib DA *ye-* to the Navajo DA *yi-*. The Dogrib data is from Saxon (1995)

5.1 Disjoint Anaphors (DA) as Non-Subject Possessors

In the following data set, I compare *ye-* and *yi-* in the possessor position of non-subject DPs:

Dogrib   *Navajo*

1)
a. Joe yetà ghà elà whehtsįb.   b.*Joe yizhee'i tsina'eeł ya ayiila
   DA.father for canoe 3.S.Pf.make   DA.father boat for 3.S.Pf.make
   'Joe$_i$ built a canoe for his$_{*i/j}$ father'   'Joe$_i$ built a canoe for his$_{i/j}$ father'

In Dogrib, the example is grammatical, in contrast to Navajo. As we have seen in chapter 3,

without context possessor *yi-* in Navajo is bad. If context is provided, as in (2) then the sentence in (1b) becomes grammatical:

2) Frank Joe yizhee'í tsina'eeł ya ayiila
    Frank Joe DA.father boat for 3.S.Pf.make
    'Frank$_f$ built a canoe for Joe's$_j$ father'

It thus appears that in contrast to Navajo, Dogrib *ye-* does not need an A'-antecedent. However, Saxon (p.c.) observes that the two languages may be closer than the data above seem to indicate. Further investigation is clearly necessary.

5.2.   Subject possessor

In the following examples, possessor *yi-* and *ye-* are shown attached to subject DPs. As expected, the result is ungrammatical in both languages. This follows from the analysis of both *yi-* and *ye-* as disjoint anaphors, since there will be no A-antecedent available for a possessor in subject position.

3)a. *Yetsèe edaïzhe   b. Yichei 'adaadzodli
     3.grandfather 3.S.Imp.be.clever   3.grandfather 3.S.Imp.be confident
     'Her grandfather is clever'   'Her grandfather is boastful'

5.3.   Summary

In (4), I summarize the comparison between Dogrib *ye-*, and Navajo *yi-*.

4)   *Dogrib*   *Navajo*
        ye-NP   *yi*-NP   (subj possessor)
        NP *ye*-NP   *NP *yi*-NP   (non-subj poss)

As (4) shows the two DAs behave alike in subject position, but differ in non-subject positions.

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This will follow if we assume that *yi-* and *ye-* both need an A-antecedent from which they must be disjoint in reference, but only Navajo *yi-* also acts as an A'-anaphor which must have a coreferent antecedent in an A'-position, possible supplied by prior disourse.

This is summarized in the table in (5):

5)	**_Dogrib_**	**_Navajo_**
Disjoint anaphor *(Contra-indexed* *A-antecedent)*	**yes**	**yes**
A'-anaphor *(obligatorily coindexed* *A'-antecedent)*	**no**	**yes**

Chapter 6

Conclusion

6.0.   Summary

In chapter one I have introduced *yi-* as a possessor prefix that attaches to noun bases to refer

to the possessor. In chapter 2 I have provided a brief summary of prior analyses of the *yi-/bi-*

altenation. Most of this work deals with verbal *yi-* and *yi-* on post-positions. My main

proposal that *yi-* is a disjoint anaphor is contained in chapter 3. I have shown that *yi-* must

have an A'-antecedent with which it is coreferent and an A-antecedent from which it is

disjoint. I have accounted for these generalizations by claiming that *yi-* is subject to both

conditions A and C of Generalized Binding Theory (Aoun 1985). In Chapter 4, I have shown

that both the A'-antecedent with which it is coindexed, and the A-antecedent with which it is

contra-indexed must agree with *yi-* in phi-features. Chapter 5 contains a brief comparison of

yi- with Dogrib *ye-*: both Navajo *yi-* and Dogrib *ye-* are disjoint anaphors (DA), and both

require an antecedent from which they must be disjoint. Importantly, Navajo *yi-* also

requires an A'-antecedent; further cross-linguistic investigation is necessary to establish

whether this is also the case for Dogrib *ye-*.

6.1.   Implications for future research

The obvious question which results from this research is whether the analysis proposed here

for possessive *yi-* can be extended to *yi-* on verbs and/or post-positions.

Though this question is well beyond the scope of this thesis, I will sketch out here the outlines of such an analysis and point out some of the ways nominal *yi-* differs in its behavior from verbal and post-position *yi-*.

Let us begin by making the null hypothesis that the analysis given here can be extended without modification to verbal and post-position *yi-*. This will imply that *yi-* must always have a disjoint A-antecedent and a coreferent A'-antecedent. Is this true for verbs and post-postions? It is the case that *yi-* on the verb must have 2 antecedents.

(1)   'asdzáán 'awéé' yideelchid
        woman   baby   3-3.touch(with hands)
        'The woman touched the baby'

(2)   'awéé' yideelchid
        baby   3-3.touch(with hands)
        'S/he touched the baby'

Verbal *yi-* refers to the object. Is there an A-antecedent from which it is disjoint? Yes, if *yi-* refers to the object, then it will be disjoint from the subject; otherwise, it would be a reflexive morpheme. Does it have an antecedent with which it is coindexed? Yes, the object itself, i.e. 'baby'. However note that the object DP is in A-position. It thus appears that the A'-antecedent that we need for possessive *yi-* is replaced by an A-antecedent for verbal *yi-*. This tentative analysis is summarize in the table below.

	Verb *yi-*	**Possessor *yi-***
Disjoint antecedent	yes	yes
DA in A-postion	yes	yes
Coindexed	yes	yes
Coreferent antecedent	NO	yes
Coreferent antecedent	yes	NO

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