In this paper, I examine morphological causatives in Navajo, which are formed on both unaccusative and unergative verbs. The unergative causatives are unusual in that verbs with 1st or 2nd person subjects are overtly marked for 3rd person object with the bi- prefix, the prefix also seen in the well-known Inverse Construction. I show that in both constructions, this prefix serves the same function: it indicates an agent argument in focus position (Agent-Focus), linking argument structure to discourse structure.

[KEYWORDS: Causative, inverse, argument structure, discourse structure, agent, focus, Navajo, Athapaskan]

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1. Introduction

This paper examines the relation between argument structure and morphology in one type of complex predicate in Navajo, the causative construction. Previous studies which discuss Athapaskan causatives include Reichard & Bitanny (1940), Hoijer (1948), Rice (1991; 2000a; 2000b; 2000c), Kibrik (1993), Hale & Platero (1996) and Hale (2000). Here, I argue that the surface properties of Navajo morphological causatives arise from the interaction of two independent mechanisms: i) complex predicate formation, and ii) the linking of argument structure to topic/focus structure (i.e. information structure).

Morphological causatives in Navajo fall into two types:

i) unaccusative verbs, which are causativized by adding the f- classifier (transitivizer) prefix and an object prefix representing the “causee”.

ii) unergative verbs, which in addition to f-, also require a y- prefix, as well as an object prefix marking the “causee.”
Navajo also exhibits syntactic (i.e. analytic or periphrastic) causatives which are formed on transitive verbs, but a detailed discussion of these types of causatives are beyond the scope of this paper.

Here, I mainly focus on the problems posed by the unergative verbs, because object marking in causativized unergatives is unusual in terms of Athapaskan causative systems in that the 3rd person prefix *bi-* is used with 1st/2nd person subjects, rather than the expected zero marking. The principal question therefore is: What accounts for this unusual object marking? Furthermore, morphological causativization of unergative verbs is not possible in all languages across the Athapaskan family, which makes this construction in Navajo particularly interesting.\(^4\)

I show how the peculiar characteristics of causativized unergatives fall out from the general principles of object marking in Navajo, rather than being peculiar to the causative construction. I provide a unified analysis of the causatives of unergative verbs and of the presence of the *bi-* in the well-known *yi-*/*bi-* Inverse Construction, arguing that *bi-* marks Agent-Focus in both cases. In addition, my analysis lends support to the notion of argument sharing in complex predicates (Alsina 1997) within Lexical Functional Grammar.

The remainder of section 1 presents relevant background information on the verb morphology of Navajo. Section 2 presents the causative data, and reviews previous analyses, notably Hale and Platero (1996) and Hale (2000). An analysis of the unergative causatives, focusing on the unusual object agreement, is outlined in section 3, while section 4 follows up with implications of the analysis. Section 5 summarizes the findings.
1.1. Navajo verb morphology

Navajo morphology is heavily prefixing. Verbs consist of a stem (root plus suffix, if any) which is generally monosyllabic, and to which several prefixes may be added. Traditionally in the Athapaskan literature, verbs have been represented using a template model. The template for Navajo is shown in (1).

(1) Navajo verb template (Young and Morgan 1992)

\[
\begin{array}{ccc}
\text{disjunct} & \text{conjunct} & \text{stem} \\
\text{prefixes} & \text{prefixes} & \\
0-1-2-3- & 4-5-6-7-8-9- & 10
\end{array}
\]

0: pronominal (object of postposition or possessor of verb-prefixedy noun)
1: postpositional, adverbial-thematic, nominal; reflexive; reversionary; semeliterative
2: iterative
3: distributive plural
4: **direct object pronouns**
5: subject pronouns (only 3rd person impersonal, spatial or indefinite)
6: thematic and adverbial elements
7: modal-conjugation markers
8: subject pronouns (1st/2nd/3rd persons singular and duoplural)
9: **classifiers (voice/valence markers)**
Of the many prefixes, the two which will concern us the most are the bi-3rd person object prefix (in position 4) and the l-classifier or valency prefix (in position 9). Word order in Navajo is SOV, but subject and object NPs are often absent, with the verb and associated prefixes alone forming a grammatical sentence.

2. Morphological causatives
2.1. Description of causatives

In Navajo, causatives (and all other transitivized intransitive verbs) are formed by the addition of the transitivizing l-classifier prefix. An object prefix indicating the “causee” is also required. Causatives are sensitive to the unaccusative (subject≠agent) - unergative (subject=agent) distinction. Examples (2)-(6) illustrate causativization of unaccusative intransitives. The l-classifier and object prefixes are highlighted in boldface.

(2) (a) yìbá’h ‘it becomes gray’ (Hoijer 1948:253)
    (b) yìiyìbá’h ‘he makes it gray, causes it to become gray’

(3) (a) dìbà’l ‘it swings, hangs (blanket-like); (Hoijer 1948:253)
    (b) yìdìbà’l ‘he hangs up a blanket-like object’
The “causee” object prefix we find in these causativized unaccusatives is the 3rd person object prefix yi-. Note, however, that regular phonological interactions within the verb often obscure the underlying prefixes. For example, in (5) – (6), yi- appears as i-. This alternation usually occurs when yi- is preceded by another prefix (Young and Morgan 1987:65). Additional examples, illustrating 1st person subjects, are shown in (7) – (9). With 1st person subjects, 3rd person object agreement is zero-marked.
(7) (a)  \( Kq’ \)  \( n\text{-}eez\text{-}tsiz. \)
fire \( n\text{-SPF:3\text{-}extinguish:PERF} \)
‘The fire went out.’  (Hale and Platero 1996:3)

(b)  \( Kq’ \)  \( n\text{-}\dot{e}4\text{-}tsiz. \)
fire  \( 3\text{:n-SPF:1s\text{-}4\text{-}extinguish:PERF} \)
‘I put the fire out.’  (Hale and Platero 1996:4)

(8) (a)  \( T\text{\-}\text{\-}shjeeh \)  \( si\text{-}ts’il. \)
barrel \( SPF:3\text{-}shatter:PERF \)
‘The barrel shattered, broke to pieces.’  (Hale 2000:86)

(b)  \( \text{\-}\text{\-}eets’aa’ \)  \( se\text{-}4\text{-}ts’il. \)
dish \( SPF:3\text{:1s\text{-}4\text{-}shatter:PERF} \)
‘I shattered the dish.’  (Hale 2000:86)

(9) (a)  \( Tin \)  \( yi\text{-}\text{\-}y\text{\-}\text{\-}i’. \)
ice \( YPF:3\text{-}melt:PERF (<-gh\text{\-}i’ <\text{-}) \)
‘The ice melted.’  (Hale 2000:87)

(b)  \( Yas \)  \( yi\text{-}4\text{-}h\text{\-}i’. (<-gh\text{\-}i’ <\text{-}) \)
snow  \( 3\text{:YPF:1s\text{-}4\text{-}melt:PERF} \)
‘I melted the snow.’  (Hale 2000:87)
Forming a causative from unergative verbs likewise involves addition of the $l$-classifier and a set of object markers representing the “causee”. The object marking found in the unergative causative construction differs from ordinary 3rd person object marking. Instead of the expected zero marking, the overt $bi$-prefix is used with 1st or 2nd person subjects. In addition, a separate prefix $y$- is also required. This is shown in the following pairs of intransitive-causative sentences in (10)-(11).

(10) (a) ‘Awéé’ naa-ghá  
baby na-IMP:3-walk:sg:CI  
‘The baby is walking around.’  (Hale and Platero 1996:4)

(b) ‘Awéé’ na-b-ii-sh-$l$-á  
baby na-$y$-IMP:1s-4-walk:sg:CI  
‘I am walking the baby around (i.e. making it walk).’  (Hale and Platero 1996:4)

(11) (a) ‘Awéé’ d-ee-zá’  
baby d-SPF:3-belch:PERF  
‘The baby burped.’  (Hale and Platero 1996:4)

(b) ‘Awéé’ $bi$-d$y$-é-sa’ ($<...-l$-za’)  
baby 3-d-$y$-SPF:1s-4-belch:PERF  
‘I burped the baby.’  (Hale and Platero 1996:5)
Addition of the classifier prefix alone is not enough to achieve causativization, as shown by the ungrammatical example in (12b).

(12)  (a)  'Awéé’ yi-dloh.

      baby PROG:3-d:laugh:PROG

      ‘The baby is laughing.’  (Hale 2000:89)

(b) *(Shí) 'awéé’ yishdloh. (< gh-sh-ð-dloh)

      *‘I laugh the baby.’  (i.e. ‘I make the baby laugh.’)

      (Hale 2000:89)

(c) (Shí) 'awéé’ biyeshdloh. (< bi-y-gh-sh-ð-dloh)

      (I) baby 3-y-PROG:1s-4-d:laugh:PROG

      ‘I make the baby laugh.’  (Hale 2000:90)

Navajo causativization of unergatives is unusual in an Athapaskan context, as noted by Kibrik (1993), who discusses morphological causatives in four Athapaskan languages (including Navajo), and states three generalizations that are worth repeating here (Kibrik 1993:51):

i) No morphological causatives can be formed from the initially transitive (Actor-Goal) verbs.
ii) Causatives are rarely formed from the agentive (one-place) verbs...therefore, causatives are mainly formed from such non-agentive basic verbs as states, processes and achievements.

iii) Causatives almost always represent the direct physical type of causation...Generally other semantic types of causation are expressed in Athabaskan analytically by means of special causative verbs.

With respect to point (i), possibly the only exceptions to this generalization are the transitive verbs ‘to eat’ and ‘to drink’, which can form a morphological causative, as shown in (13) for Navajo; see also Rice (2000c) for a survey of other languages which have limited causativization of transitive verbs. Among the languages surveyed, only Koyukon has causativization of transitives as a productive process.

(13)  Shí ashkii bi’iissá. (< b’-y-Ø-sh-l-yá)
   ‘I am feeding the boy (lit., I make the boy eat something).’
   (Hale 2000:94)

As for point (ii), Kibrik is referring to verbs which are termed “unergative” in this paper; Navajo is one of the few languages that permit morphological causativization of such verbs. Rice (2000c) points out that Ahtna, Koyukon and Carrier (Dakelh) can also be included in this category. Finally, the “direct
physical type of causation” in point (iii) is meant to designate verbs such as ‘bend’, ‘burn’, ‘dry’ and so on, where there is a concrete result of the causation.

The characteristics of Navajo causative structures outlined in this paper are summarized in the following table.

(14) Characteristics of morphological causatives

<table>
<thead>
<tr>
<th>object marking</th>
<th>additional prefix</th>
</tr>
</thead>
<tbody>
<tr>
<td>causative + unaccusative</td>
<td>yi-</td>
</tr>
<tr>
<td>causative + unergative</td>
<td>bi- y-</td>
</tr>
</tbody>
</table>

2.2. Previous analyses of causativization and the additional y- prefix

The most in-depth analysis of Navajo causatives to date is that of Hale (2000), which attempts to explain the unexpected occurrence of the bi- prefix in causativized unergatives. Hale’s (2000) analysis builds on previous work in Hale and Platero (1996). They argue that the y- prefix occurring in causativized unergatives is found in position 6 and suggest that the bi- object prefix is present as if it were attached to an incorporated postposition. Hale (2000) expands on this idea and draws on Case Theory (Bittner and Hale 1996) to argue that the y- prefix seen in causativized unergatives is itself an incorporated (causative) postposition, with the bi- prefix serving as its object. In other words, the y- prefix is in position 1, and the bi- prefix is a position 0 prefix rather than a position 4 direct object.
marker prefix. This can be seen more clearly in the verb template in (15), repeated from (1) above, with the relevant morpheme positions shown in bold.

(15) disjunct conjunct stem
0-1-2-3- 4-5-6-7-8-9- 10

0: pronominal (such as object of a postposition)
1: postpositional, etc.
4: direct object markers

An example of a simple verb illustrating positions 0 and 1 is shown in (16). Here we have the postposition k’i- meaning ‘on’, with accompanying bi- agreement.

(16) Sitsilí bik’iitlízh.
my-younger brother him-on-I-fell
‘I fell on my younger brother.’ (Young and Morgan 1987:42)

Hale (2000) argues that causativization creates a structure where an argument is Case-Bound by a verb. In Navajo, Hale states, an oblique case must be employed when an argument is Case-bound by a verb. One way of assigning oblique case is by means of a postposition. This accounts for the presence of an incorporated postposition and object agreement in the causative structure.

There are several problems with analyzing y- as a postpositional prefix. First of all, a comprehensive list of all Navajo postpositions (Young and Morgan
1992:923-929) does not list y- or yi- as a postposition, which is striking.

Secondly, Hale has to argue that this causative y- behaves differently than other postpositional elements in order to guarantee its surface linear order. A postposition should appear in position 1, to the immediate right of its complement object (position 0). However, we see from the following example, repeated from (10b) above, that the relevant prefixes are preceded by na-, meaning ‘around about’, also in position 1 (1b).

(17) 'Awéé’ na-b-ii-sh-t-dá
    baby na-3-y-IMP:1s4-walk:sg:CI
    ‘I am walking the baby around (i.e. making it walk).’
    (Hale and Platero 1996:4)

One should expect this prefix to follow the other two. In (18), another prefix, the inceptive di- (in position 6a according to Young and Morgan 1992:852) intervenes between the postposition and its object.

(18) 'Awéé’ bi-di-y-é-sa’ (<...-t-za’)
    baby 3-d-y-SPF:1s4-belch:PERF
    ‘I burped the baby.’
    (Hale and Platero 1996:5)

There are also several unergative verbs (e.g. sleep, snore, dance) which occur with the position 4 unspecified object prefix (‘-‘), which also intervenes between the putative postposition and its object. If this y- morpheme is indeed a
postposition, it is very odd that its agreement is not linearly adjacent to it. Hale (2000:94) notes that this problem is “but one of several mysteries surrounding the Navajo causative construction.”

What, then, is this $y$- element? One possible alternative is that the $y$- prefix is a so-called “peg element”, an epenthetic consonant which occurs in position 6 when there is no preceding conjunct prefix. If one assumes, following Hale, that the $bi$- prefix is actually a disjunct prefix (perhaps agreement for a null postposition), rather than conjunct object agreement, one could argue that $y$- is a peg prefix, if there are no examples where $y$- is preceded by another conjunct prefix. However, recall example (18), just seen above, which contains an additional conjunct prefix, the inceptive $di$- (in conjunct position 6a), and yet $y$- still appears. Thus, it cannot be a peg element. Furthermore, given its position following $di$-, this also means that the $y$- cannot be position 4 object agreement.

A more plausible hypothesis is that this prefix is a so-called thematic element required in the causative construction. According to Young and Morgan (1987:39), the derivational-thematic class of prefixes function simply as components of the verb, and their historical meaning is often, though not always, lost. These are opposed to paradigmatic prefixes which serve grammatical functions such as subject, object, mode, aspect and number. I argue, following Hale (2000), that the $y$- prefix appearing in causativized unergative verbs is a “causative” morpheme, but contra Hale, I propose it is a position 6c thematic prefix rather than a position 1 postposition. The need for a causative morpheme in this construction makes sense from a semantic standpoint. While the causative construction also requires the $l$- classifier (valence) prefix, this prefix does not
have inherent causative meaning on its own; it is simply a marker of increased transitivity. (See Kibrik 1993 for arguments supporting this view.) Thus it appears in most transitive verbs, not only in causative verbs. In order to mark a verb not just as transitive, but as a causative transitive, an additional prefix is required.

Three pieces of evidence in support of this hypothesis are as follows. First, such thematic prefixes obligatorily occur in the causatives of other Athapaskan languages (such as in the Slave syntactic causatives; see Rice 1989).

Second, Young and Morgan (1992:853) list seven different y(i)-morphemes occurring in position 6 (five of them in position 6c), all with adverbial or thematic meanings, so this seems like a valid possibility. If y- is a position 6 morpheme, this ensures the correct linear order of morphemes, with bi- preceding it in position 4, eliminating the ordering problem outlined above. (It also correctly follows di- inceptive in position 6a.)

A third piece of evidence comes from the agentive passive, a valency-decreasing construction. In addition to the d- valence (i.e. position 9 classifier) prefix, the agentive passive is “characterized by the prefix combination ’- (indefinite subject) plus d-, one of many prefixes appearing in Young and Morgan’s position VI” (Neundorf 2000:117). The causative and agentive passive have much in common, both affecting the transitivity of the verb, both requiring a valence (classifier) prefix, and as I would argue, both requiring a position 6 thematic prefix.

If the y- prefix is not a postposition, then the bi- prefix cannot be the object of a postposition. Young and Morgan’s (1987:64-65) analysis also supports the assertion that bi- is not the object of a postposition. They state that the prefix
bi- which is used in transitivized intransitive verbs (i.e. unergative causatives) is the third person direct object (position 4-conjunct), citing the following examples:

(19) (a)  *binîldaah*  ‘you are seating him’
            cf. *nîdaah*  ‘you are in the act of sitting down’
(b)  *habiishyeed*  ‘I’m running it up out (as a horse from a canyon)’
            cf. *haashyeed*  ‘I’m running up out’
(c)  *habiishchxééh*  ‘I’m honking it (a car horn)’
            cf. *haashchxééh*  ‘I’m starting to cry’
(d)  *biisį’*  ‘I stood him up’
            cf. *yiizį’*  ‘I stood up’

They add that “Bi-IV must not be confused with bi-0, the object of a postposition” (Young and Morgan 1987:65).

The remainder of this paper will focus on the unexpected appearance and behaviour of the bi- object morphology, and argue for a different analysis.

3. **Bi- object agreement in unergative causatives**

We begin by examining how basic third person agreement works in Navajo.

3.1. **3rd person agreement in Navajo**

Normally, the 3rd person direct object is represented by Ø when the subject of the verb is other than 3rd person. When both subject and direct object
are 3rd person, the 3rd person direct object must be represented by yi- or bi-. (See Young and Morgan 1987:64.) Yi- is the 3rd person object prefix required in normal SOV sentences when both subject and object are 3rd person. This is summarized in (20).

(20) If subject is 3rd p. obj agreement is

<table>
<thead>
<tr>
<th></th>
<th>3rd p. obj agreement is</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ø</td>
</tr>
<tr>
<td>2</td>
<td>Ø</td>
</tr>
<tr>
<td>3</td>
<td>usually yi-, sometimes bi-</td>
</tr>
</tbody>
</table>

The problem involves two separate issues:

1) The unergative causative sentences exemplified in (10)-(12) and (19) have 1st or 2nd person subjects. Why is there any overt 3rd person object agreement at all?

2) The usual 3rd person object agreement is yi-. Why is the object agreement bi- and not yi- in causativized unergatives?

3.2. Question 1: Why is 3rd person agreement overt in causatives with a 1st/2nd subject?

Many recent analyses argue that causatives undergo a type of argument sharing whereby the internal argument of the causative predicate is semantically identified with the subject of the embedded predicate. In one such analysis, within the framework of Lexical Functional Grammar (LFG), Alsina (1997)
argues that causative complex predicates are formed by predicate composition, whereby an incomplete predicate is forced to combine with another predicate in order to complete its argument structure. Alsina (1997) thus defines a complex predicate as a complex argument structure consisting of a combination of the predicate information of both the causative morpheme and the verb stem to which it attaches. This is illustrated by the causativization of the verb laugh in (21)-(23). The base predicate laugh has one (external) argument which is a Proto-Agent. Arguments are classified as Proto-Roles (adopting the term from Dowty 1991).

Functional Mapping Theory (FMT) creates a correspondence relation between a predicate’s arguments and syntactic functions. One of the principles of FMT, the External Argument Mapping Principle (Alsina 1997:207), requires that an external argument map on to the syntactic function of SUBJECT, as shown in (21).

(21)  Base Predicate (Alsina 1997:210)

`laugh <[Proto-Agent]>`

| SUBJ

Within LFG, grammatical functions such as SUBJ and OBJ act as linkers between argument (a-)structure and constituent (c-)structure, and make up the functional structure, or f-structure.\(^{11}\)

The schema for a causative predicate, as illustrated in (22), results from the morphological combination of the causative morpheme with a verb stem,
achieving composition of the predicate information (Alsina 1997:211). The structure of the causative involves a cause functor which takes an underspecified predicate; the latter is then realized by a predicate with lexical content. As shown in the diagram in (22), Predicator* followed by an underspecified a(rgument)-structure represents any predicator and its a-structure. The causative predicate must compose with another predicate in order to be complete. The line connecting the argument of the causative predicate with an argument of the embedded predicate denotes that they are the same semantic participant (Alsina 1997:211).

(22) Causative predicate (Alsina 1997:211)

```
  ag          pt
  |           |
  ‘cause <[Proto-Agent] [Proto-Patient]    Predicator* <[ ]...>>’
  |__________________________|
```

Within the framework of Alsina (1997) arguments are not represented in the structure as thematic roles. Nonetheless, the thematic roles are shown in (22) and subsequent diagrams for clarity. These are indicated as ag and pt and are linked to the Proto-Roles in the diagram.

Finally, (23) shows composition of the base predicate laugh with the causative predicate.
(23) Predicate composition (Alsina 1997:212)

\[
\begin{array}{c|c|c|c}
\text{ag} & \text{pt} & \text{ag} \\
\hline
\text{\texttt{\textasciicircum\texttt{cause} <\texttt{Proto-Agent} \texttt{Proto-Patient} laugh <\texttt{Proto-Agent}>}} \\
\hline
\text{SUBJ} & \text{OBJ} \\
\end{array}
\]

Applying this to the Navajo example *I make the baby laugh*, shown in (24), we can interpret this sentence as containing two predicates, i.e. *I cause/affect the baby, such that the baby laughs*.

(24) (Shí) ’awéé’ biyeeshdloh. (< bi-y-gh-sh-í-dloh)  
(I) baby 3-y-PROG:1s-l-d:laugh:PROG  
‘I make the baby laugh.’  
(Hale 2000:90)

(25) I baby baby  
\[
\begin{array}{c|c|c|c}
\text{ag} & \text{pt} & \text{ag} \\
\hline
\text{\texttt{\textasciicircum\texttt{cause} <\texttt{Proto-Agent} \texttt{Proto-Patient} laugh <\texttt{Proto-Agent}>}} \\
\hline
\text{SUBJ} & \text{OBJ} \\
\end{array}
\]
In (25), *baby* is identified with two arguments; *baby* functions as both the patient of *cause* and the agent of *laugh*.

To summarize, object morphology is sensitive to a particular type of a-structure transitivity: if there are two 3rd person arguments present at a-structure, a 3rd person object morpheme, which in this case is *bi-* , appears. We can now answer our first question: why is there overt 3rd person object agreement with 1st/2nd person subjects, when you normally only get overt agreement with two third person arguments? Overt 3rd person agreement morphology is necessary because there are two 3rd person arguments (the baby-patient and the baby-agent). This agreement, in combination with the *f-* valence/classifier prefix and the *y-* causative/thematic prefix, marks the unergative verb as causative.

### 3.3. Unaccusative predicates

Having shown that the appearance of object agreement morphology in causativized unergatives is due to an a-structure containing two 3rd person arguments, one might ask what happens with unaccusative predicates. I repeat example (6) from above (see also (2)-(5) and (7)-(9)).

(26) (a) *Tl’óotl k’í-ní-dláád.*
    rope *k’í-NPF:3-break:PERF*
    ‘The rope broke.’ (Hale and Platero 1996:4)
An unaccusative verb such as *break* is associated with one argument, a Proto-Patient role, as shown in (27).

(27) Base Predicate

‘break <[Proto-Patient]’

| SUBJ

When combined with the causative predicate, the result is very similar to that of the unergative causative, with the exception that the two arguments which are semantically identified with each other are Proto-Patients. This is illustrated in (28).

(28) he rope rope

ag pt pt

‘cause <[Proto-Agent] [Proto-Patient] break <[Proto-Patient]>>’

SUBJ OBJ
But what of object marking? Recall from section 3.2 the conditions under which 3rd person object marking is required. Overt 3rd person agreement morphology is necessary when there are two 3rd person arguments in the a-structure. In this particular example, complex predicate formation results in two 3rd person arguments, the Proto-Agent ‘he’ and the Proto-Patient ‘rope’; therefore, overt 3rd person agreement morphology is required. The usual object marking used with two 3rd persons is the prefix *yi-* , and this is the prefix we find in causativized unaccusatives. As expected, there is no object marker in unaccusative causatives with a 1st person subject (examples (7)-(9)), since the only 3rd person at a-structure is the Proto-Patient.

As a final note with causativized unaccusatives, the examples given in section 2 all involve inanimate patients, but animate patients also fail to trigger *bi*-marking. This can be seen in the example of an unaccusative motion verb such as carry (i.e. CAUSE-move), shown in (29), where the agreement is *yi-* .

(29) ‘ashkii mósi ’atìngóó yootéel
   ‘ashkii mósi ’atìn-góó yoo-l-téel
boy cat road-at 3/Acc:3/Nom:Md-TI^AnO.move:Prog
‘The boy is carrying the cat along the road.’ (Kibrik 1996:270)

This is as predicted.
3.4. Question 2: Why is the agreement marker bi- with unergatives?

We can now turn to our second question. The usual 3rd person object agreement is yi-. Why is the object agreement in causativized unergatives bi- instead of yi-?

3.4.1. Why not yi-?

First, let us consider why yi- is permitted with causativized unaccusatives, but not with unergatives. Horseherder’s (1998) insightful analysis of possessor yi- treats it as a disjoint anaphor, comparable to its cognate in the Northern Athapaskan language Dogrib (Saxon 1986). According to Horseherder (1998), yi- is an anaphor which must be bound by a coindexed A’ antecedent, while at the same time, it must have an A antecedent from which it is disjoint in reference. Bi-, on the other hand, behaves like a pronoun. Thus, yi- is subject to both Conditions A and C of Aoun’s (1985) Generalized Binding Theory, while bi- is only subject to Condition B.

It is important to note, however, that Horseherder (1998:21) states explicitly that “we must assume that possessive yi- and bi-, although related to yi- and bi- on verbs, are used differently.” Horseherder sketches out a tentative proposal of where the difference may lie between possessor yi-, on the one hand, and verbal/postpositional yi- on the other: the latter requires binding by a coreferent A (rather than A’) antecedent, in addition to an A antecedent from which it is disjoint in reference.

Horseherder’s insights about verbal yi- may be relevant to our analysis of causatives. As we saw in section 2.1, yi- does occur with the causativized
unaccusatives, although not with the causativized unergatives. In the unaccusative cases, both of the embedded roles are the same (e.g. the patient ‘rope’ in ‘He broke the rope’). This may mean that the matrix subject is accessible as an antecedent for the disjoint anaphor yi-. In the unergative case (e.g. ‘He made the baby laugh’), perhaps the closest antecedent to the embedded theme ‘baby’ is the baby-agent; since they are co-indexed, the disjoint anaphor is ruled out.14

3.4.2. Why bi-?

To answer this question, we examine the other instances where bi- object morphology is present. Bi- is the object prefix which shows up in the yi-/bi- alternation known as Subject/Object Inversion or the Inverse Construction. This construction is one of the most-discussed topics in the Athapaskan syntactic literature (See, e.g., Hale 1973; Creamer 1974; Platero 1974; Perkins 1978; Shayne 1982; Sandoval 1984; Sandoval & Jelinek 1989; Willie 1989; 1991; 2000; Speas 1990; Thompson 1996; Uyechi 1996; Jelinek 1997; Horseherder 1998; Saxon & Rice 2001; and others.) Examples of the yi-/bi- alternation are illustrated in (30)-(32).

(30) (a) ḥiʼiʼ dzannéz yi-ztal

horse mule 3O-3SGS-kicked

‘The horse kicked the mule.’ (Hale 1973:300)
(b)  
\[ \text{dzannéz} \quad \text{bli} \quad \text{bi-zař} \]
mule       horse       3O-3SGS-kicked

‘The mule was kicked by the horse.’

i.e. ‘The horse kicked the mule’ or

‘The mule, the horse kicked him.’ (Hale 1973:300)

(31)  
(a)  
\[ \text{‘ashkii} \quad \text{‘at’ééd} \quad \text{yiïiïtśa} \]
boy       girl       3O-3SGS-saw

‘The boy saw the girl.’ (Hale 1973:301)

(b)  
\[ \text{‘at’ééd} \quad \text{‘ashkii} \quad \text{biïtśa} \]
girl       boy       3O-3SGS-saw

‘The boy saw the girl.’ (Hale 1973:301)

(32)  
(a)  
\[ \text{‘leéchq’i} \quad \text{mósi} \quad \text{yiïxhaï} \]
dog       cat       3O-3SGS-bit

‘The dog bit the cat.’ (Hale 1973:301)

(b)  
\[ \text{mósi} \quad \text{‘leéchq’i} \quad \text{biïxhaï} \]
cat       dog       3O-3SGS-bit

‘The dog bit the cat.’ (Hale 1973:301)

If both arguments are 3rd person and there is only one overt NP, the default
interpretation is that NP is the object, as shown in (33a). This is the so-called
“One Nominal Interpretation” effect (Gerdts 1988; Roberts 1999). This term is borrowed from Salish linguistics, where it describes the fact that a single unmarked nominal constituent in a transitive sentence must be interpreted as the object. In Navajo, if *bi-* object marking is used instead of *yi-*, the one overt NP is interpreted as the subject, as shown in (33b).

(33) (a) ’Ashkii *yi*yiércą.
boy 3O-3SGS-saw
‘He/she/it saw the boy.’
NOT ‘The boy saw him/her/it.’ (Speas 1990:214)

(b) At’ééd *bi*ércą.
girl bi-saw
‘The girl saw him/her.’
NOT ‘He/she saw the girl.’ (Speas 1990:216)

Hale (1973) is the first to discuss the Inverse Construction in any detail, and observes:

[the subject-object inversion rule] brings about a change in the order of the noun phrases so that, in the derived structure, the logical object (or patient) precedes the logical subject (or agent)...[and] application of the rule is apparently limited to sentences in which both the subject and the object are 3rd-person. (Hale 1973:300).17
Since Hale (1973), numerous researchers have examined the Inverse Construction, and all emphasize the notion that bi- marks the subject as a patient and the object is topicalized; a sampling of these ideas follows.

Sandoval & Jelinek (1989:356) claim that “the bi- construction, like the English Passive, involves an argument that does not have the thematic role of agent (that is, a patient, theme, goal, etc.) but does have the grammatical role of Subject.”

Willie (1989:410) notes: “The bi- prefix marks a construction as inverse. That is, the usual link between the transitive subject and the theta-role agent is reversed.”

Speas (1990) argues that yi- is an agreement marker while bi- is an incorporated pronoun which “occupies the object position at D-structure and is incorporated into the verb… It differs in interpretation from the parallel sentence with a yi- verb in that there is a focus on the object” (Speas 1990:261). Sentences with bi- verbs and two overt NPs are like left dislocations in English; the leftmost NP is co-indexed with the pronoun bi-.18

Thompson (1996) argues that there is no link between Subject-Object Inversion and the yi-/bi- alternation; the choice between the two is instead tied to discourse topicality with the prefix bi- indicating that the object is more topical than the subject.

Finally, Jelinek (1997) also supports the claim that the Inverse marks a change in the mapping between thematic relations and topic/focus structure. With yi-, the agent is topic and the patient is focus; the bi- pronoun, on the other hand, marks a topicalized patient.
The *yi-/bi-* construction also bears resemblance to the “topical object” suffixes found in Salish and other languages. Kinkade (1990:343) observes:

The main function of the topical object as contrasted with the plain (often zero) 3rd-person object is to keep track of a topic in a section of discourse when there is more than one 3rd-person referent present and the one that is topic has been shifted into a patient role and designated by a pronominal object marker.

The point I want to emphasize here, is that each of these analyses of the Inverse Construction underscores the fact that *bi-* marks the mapping of *patient* (rather than agent) to subject or topic. This is illustrated in (34a). I propose that a slightly different perspective more accurately characterizes the function of *bi-*.

Crucially, *bi-* refers to agent and focus: *bi-* marks the agent argument as focused, as shown in (34b).

(34) (a)  
\[
\begin{array}{cccc}
& & \text{bi-} & \\
\text{AGENT} & & \text{PATIENT} & \\
\text{TOPIC} & & \text{FOCUS} & \\
\end{array}
\]

(b)  
\[
\begin{array}{cccc}
& & \text{bi-} & \\
\text{AGENT} & & \text{PATIENT} & \\
\text{TOPIC} & & \text{FOCUS} & \\
\end{array}
\]
Canonically, the NP which bears the thematic role of agent is the one that appears in topic, i.e. NP\(_1\). The NP which bears the role of patient appears in focus, or NP\(_2\). These are the cases where yi- appears when there are two 3rd person arguments. (See (34c).) However, in the Inverse Construction, a 3rd person agent appears in focus (and topic is a non-agent of the predicate). This unexpected ordering is signaled to the listener by use of bi- rather than yi-. I define the bi-marking rule in (35).

(35) *Bi-* marking rule: The *bi-* prefix occurs if a 3rd person agent argument appears in focus (FOC).

We now turn to a formal definition of focus.

### 3.4.3. Focus position

In LFG terms, topic (TOP) and focus (FOC) are non-argument functions that do not map directly to a-structure roles. TOP and FOC indirectly map to the argument structure by means of identification with, or anaphoric linking to, another syntactic function (Bresnan 2001:97). TOP and FOC (along with SUBJ) are further classified as discourse functions. Of all the grammatical functions, these are the most salient in discourse and “often have c-structure properties that
iconically express this prominence, such as preceding or c-commanding other constituents in the clause” (Bresnan 2001:98).

For Navajo, I define FOC as the position immediately preceding the verb. This is not a new idea; it has long been argued that Navajo is a discourse-configurational language (e.g. Willie 1991, Jelinek 1997, Willie and Jelinek 2000, Hale, Jelinek and Willie 2003). Under this view, overt NPs are adjuncts, rather than arguments, and the order of these NPs is determined by discourse (topic-focus) structure. “In sentences that contain more than one word, the word immediately preceding the inflected verb is in the focus position” (Jelinek 1997:249). In a sequence NP₁-NP₂-VERB, TOP refers to NP₁, and FOC refers to NP₂. The focus position is thus immediately left-adjointed to the VP.

Let us review some of the previously established evidence for the focus position. To begin with, consider sentences which include first or second person arguments and one overt NP; the NP can only be coindexed with third person arguments.

(36) (a) 'ashkii yiiltsá
boy 3Obj-1sSubj-V
Focus Focus-Topic-V
‘The boy, I (Topic) saw him.’ (Hale, Jelinek & Willie 2003:6)
As argued by Hale, Jelinek and Willie (2003:7), in the above examples “it is the NP ashkii “the boy” that is third person and the new information in this context, carrying Focus... A first or second person argument is old information, familiar in the context, and is backgounded or Topical.”

When there are two third person arguments and yi- agreement on the verb, the NP is likewise focused information, as shown in (37).

We know that the boy is a patient rather than the agent here because “the third person yi- pronoun marks an ordinary focused Object” (Hale, Jelinek and Willie 2003:11).

In a similar example with two third persons and bi-marking, in (38) repeated from above, the one overt NP remains focused, providing the new
information, but the use of bi- rather than yi- indicates that this NP is the agent of the action (glosses as in source).

(38)  At’ééd biiłtsqá.

girl   bi-saw

‘The girl saw him/her.’

NOT ‘He/she saw the girl.’ (Speas 1990:216)

As previous researchers have pointed out, topic and focus can be determined using a question/answer format. Sentences like (37) ‘He saw the boy’ would be a suitable answer to the question “What did s/he do?”, whereas sentences like (38) would be appropriate in response to “What happened to him/her?” (cf. Jelinek 1997:248, Willie and Jelinek 2000:265). In both cases, the new information, or focus, is provided by the overt NP.

Another piece of evidence that is usually cited to show that the preverbal position is a focus position, is the use of strong pronouns for contrastive focus. These focused pronouns may refer to the subject (39a), or the object (39b), but it is ungrammatical to have two in a sentence (39c).

(39)  (a)  ni  nisisdlqáqdd

YOU  2sACC-1sNOM-believed

‘You are the one I believed.’ (Willie & Jelinek 2000:255)
(b)  

\[ shí \ nisisdlq̥d \]

I 2sACC-1sNOM-believed

‘I am the one who believed you.’  (Willie & Jelinek 2000:255)

(c)  

\[ ## shí ni nisisdlq̥d \]

(Willie & Jelinek 2000:255)

The ungrammaticality of (39c) is expected under the assumption that there is only
one focus position, the position preceding the verb.\textsuperscript{20}

Finally, note that in a sentence with two third persons but where no NPs
are overt, the choice of \textit{yi-} or \textit{bi-} determines discourse topicality (Hale, Jelinek
and Willie 2003:13)), as shown in the following example.

(40) (a)  

\[ Yízts’qs. \]

3Obj-3Subj-kissed DIRECT

Foc-Top-V

‘She (Topic) kissed him (Focus).’

(Hale, Jelinek & Willie 2003:13)

(b)  

\[ Bizts’qs. \]

3Obj-3Subj-kissed INVERSE

Top-Foc-V

‘He (Topic) was kissed by her (Focus).’

(Hale, Jelinek & Willie 2003:13)
To summarize, it has been argued that the position preceding the verb in Navajo is a focus position. I adopt this view here, and define FOC in (41).

(41) Focus (FOC): The position that immediately precedes the verb complex (adjoined to the VP) is a focus position.

Having established this definition of FOC, we turn back to the question of bi-marking in causativized unergatives.

3.4.4. Agent-Focus in unergative causatives

Recall that the question we set out to answer in this section concerns the presence of the agreement marker bi- in causativized unergatives, rather than the usual object agreement found with two 3rd persons, yi-. Just as in the Inverse Construction, the bi- prefix indicates a non-canonical ordering where agent appears in FOC (and TOP is a non-agent of the base predicate).\(^{21}\) This is illustrated in (42) and (43), repeated from above.

(42) TOP FOC  
(Shí) ’awéé’ biyeeshdloh. (< bi-y-gh-sh-l-dloh)  
(I) baby 3-y-PROG:1s-1-d:laugh:PROG  
‘I make the baby laugh.’ (Hale 2000:90)
The *bi*-prefix indicates that *baby*, in FOC, is agent of the base predicate *laugh*, rather than patient. As for the topic, *I*, *bi*- can only tell us that it is a non-agent of the base predicate *laugh*; this does not preclude it from being an agent of the causative predicate. It is not enough to say, as in previous analyses, that *bi*-indicates a topicalized patient; while this works perfectly well for the Inverse cases, it will not explain the causative cases nor the one-nominal cases. This may be seen more clearly by reviewing an example of each in (44)-(46).

(44) Inverse

\[
\begin{array}{llll}
\text{subject} & \text{agent} & \text{patient} & \text{agent} \\
\text{TOP} & \text{FOC} & \text{agent} \\
\end{array}
\]

\[
\begin{array}{llll}
\text{At'ééd} & \text{'ashkii} & \text{biňtsé} & \text{‘The boy saw the girl.’} \quad \text{(Hale 1973:301)} \\
\text{girl} & \text{boy} & \text{3O-3SGS-saw} \\
\end{array}
\]
(45) Causative

\[ \text{(Sh́i)} \quad \text{\textquoteleft awéé\textquoteright \ biyeeshdloh. \textquotesingle I make the baby laugh.' \[=(42)]}\]

(I) baby 3-y-PROG:1s-l-d:laugh:PROG

TOP FOC

ag of cause ag of laugh/pt of cause

*patient

(46) One nominal

\[ \text{At\'ééd biiltse. \textquotesingle The girl saw him/her.' (Speas 1990:216)}\]

girl bi-saw

FOC

agent

*patient

Thus, the function of bi- is to mark Agent-Focus.

A very similar construction occurs in Tzotzil, a Mayan language. The Agent Focus form, a type of Inverse, is only permitted in clauses with 3rd person agent and patient (Aissen 1999).

Finally, this answers our second question concerning agreement in unergative predicates: when there are two 3rd person arguments, the 3rd person object marker bi- is used rather than yi- to indicate that the focused NP is an agent of the base predicate. Notably, I have shown that the prefix bi- has the same function in two seemingly unrelated constructions; in both the Inverse Construction and the Causative Construction, it marks an NP as Agent-Focus.
This is summarized in the definition in (47), combining the points established in (35) and (41) above.

(47) Definition of Agent-Focus in Navajo

(a) Bi- marking rule: The bi- prefix occurs if a 3rd person agent argument appears in focus (FOC).

(b) Focus (FOC): The position that immediately precedes the verb complex (adjoined to the VP) is a focus position.

4. Additional evidence and predictions

Besides the Inverse and Causative Constructions, there are some additional examples where the bi- prefix is present, which also serve to illustrate that bi- marks Agent-Focus.

4.1. WH-questions and bi-marking

The Inverse Construction can be used in WH-questions. Consider the following examples.

(48)  

(a) Háí-sh yizts’qs.

who-Q 3ACC-3NOM-kissed (Direct)

‘Who did he kiss?’

(Willie & Jelinek 2002:272)
In both (48a) and (b), the WH-question word is in the FOC position. In the yi-sentence, the WH-word denotes the patient, whereas in the bi-sentence, it is the agent. This is consistent with the Agent-Focus analysis. The next pair of examples illustrate questions containing both a WH-word and an overt nominal.

(49) (a) *Jáan háísh yizts’qs*
    John who-Q 3ACC-3NOM-kissed (Direct)
    ‘As for John, he kissed who?’   (Willie & Jelinek 2000:272)

(b) *Jáan háísh bizts’qs*
    John who-Q 3ACC-3NOM-kissed (Inverse)
    ‘As for John, he was kissed by whom?’  
    (Willie & Jelinek 2000:273)

In these examples, the WH-word can be considered to be in-situ. Once again, the interpretation of the WH-word is as expected if one adopts the Agent-Focus proposal. In (a) the question word refers to the patient of the kissing, whereas in (b), it refers to the agent.

Interestingly, Navajo permits optional WH-movement, as shown in (50) and (51). This results in ambiguous readings for verbs with yi-, as in (50).
The interpretation in 1) results from an in-situ reading, where the WH-word is in place of the subject (or agent) NP, in the sentence-initial TOP position. The second reading is due to the possibility that the WH-word originated in the focus position, as patient, and has moved to sentence-initial position.

The bi-sentence, on the other hand, is unambiguous. The NP Jáan, in FOC, immediately left-adjoined to the NP, is the agent of the sentence.

There can only be one interpretation because if John, in FOC, is the agent, as dictated by bi-, the only alternative for the WH-word is as patient.

As pointed out by Bresnan (2001), sentences like (51) are in conflict with analyses (such as Speas 1990) which treat bi- as an incorporated pronoun; it should not be possible to link bi- to a question-NP. It is also challenging for topic
analyses of *bi*-, since WH-words are inherently focused. Adopting the Agent-Focus analysis, on the other hand, is unproblematic; the NP in FOC is unambiguously the agent of the sentence.

4.2. Possessives and Postpositions

In addition to the alternation seen with *yi-*/*bi*- on verbs, *yi*- and *bi*- also occur as pronominal agreement on postpositions, and as possessor prefixes on nouns. Let us briefly examine whether the Agent-Focus analysis of *bi*- can apply in these cases too.

First, consider a sentence where a postpositional phrase precedes the verb, and all three NPs (subject, object and oblique object) are overt. Following Willie (2000), one must assume that this type of sentence is treated as containing a complex or phrasal verb, consisting of the verb and the preceding postpositional phrase, such as in (52), ‘to pull (someone) on a bike’. This complex verb is indicated within bolded square brackets.

(52) (a) *Ashkii at’ééd [dzi’izi yíl yoodz[ś]]*

boy girl bike y-with y-pull

‘The boy is pulling the bike with the girl [on it]’

(Saxon 2001:4, citing Perkins 1978:116)
(b)  
\[
\text{Ashkii at'\'e\'ed [dzi'iz\'i bi\'l yoodz[\{s]\]}
\]
boy  girl  bike  b-with y-pull

‘The girl is pulling the bike with the boy [on it]’

(Saxon 2001:4, citing Perkins 1978:116)

(c)  
\[
\text{*Ashkii at'\'e\'ed [dzi'iz\'i bi\'l boodz[\{s]\]}
\]
boy  girl  bike  b-with b-pull

‘The girl is pulling the bike with the boy [on it]’

(Saxon 2001:4, citing Perkins 1978:116)

Sentence (52a) uses the yi- prefix, and so the canonical agent-patient order of the NPs is obtained. In (52b), however, the bi- prefix is present. Following the principle developed here, bi- marks that the NP girl, which is in FOC position immediately preceding the complex verb, is an agent. Furthermore, note that (52c), with two instances of bi-, is ungrammatical. Since it should not be necessary to indicate Agent-Focus more than once, perhaps it is not possible to have more than one bi- in a predicate. This generalization appears to be true for both verbal and postpositional cases. However, this does not extend to examples with possessor bi-, as evidenced by the following example where one of the two is incorporated into the verb as part of an inalienably possessed noun. This is shown in (53); brackets in the interlinear gloss are as given in the source and mark NP boundaries. 22
Nonetheless, *bi*- on the verb still indicates Agent-Focus in this example, since the complex NP ‘John’s goat’ is understood to be the agent of the verb.

The Agent-Focus account of *bi*- does extend to most examples with possessed nouns. An additional example is given in (54); brackets indicate the complex verb.

(53)  
\[ \text{Hastiin John bitl’ízí bitsqá:dzítáál.} \]

[man] [John 3POSS-goat] INV3.3.belly:kicked

‘John’s goat belly-kicked the man.’ (Willie 1991:194)

(54)  
(a)  
\[ \text{Hastiin Baa’ [yil[i’ yizloh]} \]

man Baa’ POSS-horse yi-roped

‘The man roped Baa’s horse.’ (Speas 1990:272)

(b)  
\[ \text{Hastiin Baa’ [bil[i’ yizloh]} \]

man Baa’ POSS-horse yi-roped

‘Baa’ roped the man’s horse.’ (Speas 1990:272)

Once again, (54b) illustrates the Agent-Focus form, where *Baa’* in FOC, is the agent of the horse-roping. However, the sentence in (55) constitutes a counterexample to the Agent-Focus account.

John Baa’ poss.mother 3-3.Pf.bit

‘John bit Baa’s mother.’


Following the principles developed here, the phrasal verb *[bimá yishxash]* is marked with *bi-*, which should indicate that the NP in FOC is the agent, i.e. ‘Baa’ bit John’s mother.’ This would exactly parallel the example in (54) above. However, ‘John’ is actually interpreted as the agent. This means that the appropriate bracketing is *[Jáan] [Baa’ bimá] [yishxash]*, and the *yi*- prefix on the verb dictates that normal SOV (agent-patient) order determines the reading of the sentence.

I do not have a solution for this exception, but offer the following two hypotheses. First, the semantics of the relevant noun-verb pairing may not permit treatment as a complex, or phrasal verb. For example, ‘mother-biting’ is not a phrasal verb in the way that ‘horse-roping’ is! A second, more plausible hypothesis, has to do with the fact that ‘mother’ is an inalienably possessed noun. In discussing this exception, Perkins (1978) concluded that “kinship possession is an exception” Perkins (1978:129). In Willie’s (1991) examination of the Inverse construction in Possessor-Raising, she notes that “Some Navajo speakers do not use Possessor Raising in this way, and do not permit *yi-* on kin terms”, citing the following example:
If there is variability among Navajo speakers on whether yi- can be used in such constructions, this may explain why it is ungrammatical to have yi- prefixed to má ‘mother’ in example (55), and bi- must be used instead, even though it is not marking Agent-Focus. Willie (2000:372) discusses this issue further, arguing that there are cultural constraints on the yi- possessor, and summarizes the facts as follows: “Possessive yi- is relatively rare in Navajo and typically involves items that are culturally classed as ‘inalienably’ possessed: body parts, kin terms, and a few other very frequently used nouns such as ‘house’.” Clearly, there are some interesting complications with inalienably possessed nouns, both with regard to examples like (55), and the fact that two instances of bi- may sometimes occur, as in (53) above. This warrants a much fuller examination in future research.

4.3. Causativized unergatives and 3rd person subjects

Something must be said about causativized unergatives with both 3rd person subject and 3rd person object; object marking does not follow the pattern illustrated in section 2.1 above. Although all other persons in the paradigm (i.e. 1st and 2nd singular, dual and plural, 4th person) have bi- marking, yi- appears when there are two 3rd persons. Consider the following examples of causativized unergatives from Young and Morgan (1987; page numbers shown in parentheses).
The examples in (a) illustrate forms with 1st person subject (and 3rd object), while the (b) examples have 3rd person subject (3rd object).

(57) ‘to walk it along (a baby, by holding its hands) (Prog.)’ (259)
(a) biyeeshłáał
(b) yiyooltáał

(58) ‘to run it; to cause to run (Prog.)’ (259)
(a) biyeeshwoł
(b) yiyoowlwoł

(59) ‘to honk it (a car horn – lit. to make it cry one time after another); to cause to cry (Imperf.)’ (373)
(a) habįishchxééh
(b) hayiyiłchxééh

(60) ‘to talk for it (a baby, i.e. to tease another person by saying something and attributing it to a baby) (Dur. Imperf.)’ (748)
(a) yábüšhti’
(b) yayiyiłt’ti’

The reason for this likely stems from the ambiguity that would arise if bi- were used instead; it would be unclear whether the form was meant to be an Inverse, or a causative. Since Inverse forms are presumably used more frequently than
causatives are, perhaps the use of bi- in two third persons is reserved for cases of the Inverse. Another possible explanation may be due to the nature of the templatic morphology, and the fact that there are two prefixes competing for the same slot. When there are two 3rd person arguments in a non-Inverse sentence, the pronominal prefix yi- is required. In the Causative Construction, the prefix bi- is required to mark Agent-Focus. Since it is not possible to have two prefixes simultaneously in position 4, one must win out over the other. In the cases exemplified here, it seems that yi- is the one that is chosen.

Similar facts obtain in verbs which have incorporated postpositions in position 1. The postpositions take bi- pronominal agreement (in position 0) in all persons, except when the subject of the verb is 3rd person, in which case yi- is used instead. Bi- is only used with 3rd persons in the Inverse Construction. Compare the examples with incorporated postposition ya- ‘under’ in:

biya’diishgééd ‘I am digging under it’ and yiya’diigééd ‘S/he is digging under it’ (Young and Morgan 1987:258). With respect to postpositional agreement, Young and Morgan (1987:28) observe that “The 3o. form yi- generally connotes the fact that the noun first mentioned is the subject of the sentence, while a second noun is the object of the postposition. With subject/object inversion the 3. form bi- is used, indicating that the noun first mentioned is the object.” Thus it seems that when there two 3rd persons, bi- is only used in cases of the Inverse; this generalization is paralleled in the causativized unergatives.
4.4. Predictions with causativized unergatives

The bi- marking rule developed in this paper, as defined in (47) above, makes a number of predictions. There are some examples of causativized unergative sentences which would crucially test the validity of the bi- marking rule. Consider the following:

(61)  
(a) I make the baby laugh.  
(b) The woman makes me laugh.  
(c) The woman makes the baby laugh.  

\[
\text{[woman-Ag/Top [baby-Ag/Foc [bi-V]]]}
\]

In (61a), the underlying agent argument of laugh is correctly predicted to trigger bi- marking, as we saw in (12c), repeated as (62a).

(62)  
(a) (Shí) ’awéé’ biyeeshdloh.  

\[
\text{I baby 3-y-PROG:1s-1-d:laugh:PROG} \\
\text{‘I make the baby laugh.’} \quad \text{(Hale 2000:90)}
\]

As for (61b), the Agent-Focus analysis would predict that bi- should appear, since the one overt NP preceding the verb complex, woman, is an agent rather than a patient (albeit agent of the causative verb rather than agent of the base predicate laugh). The translation of (61b) is given in (62b).
Here, the form given is not a bi-marked verb, but the verb *laugh* preceded by the postposition -"aa ‘about’ inflected with bi-. It may seem surprising that a verb plus postposition is given for this form, rather than a simple morphological causative, as in examples like *I made the baby laugh*. However, *the woman makes me laugh*, would require 1st person object morphology (*sh-*) in position 4, and since bi- cannot also go there, this may be why an alternate form with a postposition is used instead.

In (61c), where there are two overt 3rd person NPs, the Agent-Focus proposal predicts that the focused 3rd person agent arguments should trigger bi-marking. But, as seen in (62c), the Navajo form is extremely marginal.

The reason for this is unclear. This is a question which remains for future research, and more examples need to be tested.
5. Conclusions

We have seen that morphological causatives in Navajo can be formed from both unaccusative and unergative verbs. Both types exhibit unique properties, including overt 3rd person agreement morphology. Causativized unergatives are especially unusual in that they require the prefix bi- rather than yi-, when the subject is 1st or 2nd person.

Normally, overt 3rd person morphology is only required when there are two 3rd person arguments in a clause. By appealing to an LFG-analysis of complex predicates, whereby the internal argument of the causative predicate is semantically identified with the external argument of the embedded predicate, we can explain why 3rd person object marking is necessary in causatives: there are two 3rd person arguments at a-structure.

Secondly, the usual agreement found with two 3rd person arguments is the yi- prefix. This prefix does appear with causativized unaccusatives. In causativized unergatives, however, the agreement prefix present is bi-. By examining the behaviour of the bi- object agreement in the Inverse Construction, where this prefix also appears, we are able to more clearly define the function of this prefix: the bi- prefix indicates a non-canonical mapping between argument structure and discourse structure. The bi- morpheme indicates Agent-Focus. Crucially, the choice of yi-/bi- is sensitive to argument structure rather than grammatical relations. While this analysis builds on the insights of previous researchers who link the bi- prefix to discourse structure, it contributes a new proposal of the function of bi- within discourse structure.
A reinterpretation of the principles governing 3rd person object marking in Navajo thus makes it possible to unify two seemingly unrelated uses of the bi-prefix, providing a new analysis of the Inverse Construction, as well as of the problematic unergative causatives in Navajo.

REFERENCES


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Navajo is a language of the Apachean subgroup of Athapaskan, spoken in the southwestern United States.

The traditional term “classifier” is a misnomer in that the classifiers do not perform a classificatory function; rather, they mark voice and valency.

Rice (2000a) reports that only Navajo, Ahtna, Koyukon and Dakelh (Carrier) allow (morphological) causativization of verbs with agentive subjects.

Young and Morgan (1992) use Roman numerals for the position slots rather than the Arabic numerals used here.

Rice (2000b) points out that while analyses of Slave (Rice 1991) and Navajo (Hale and Platero 1996) have argued that the causative construction with the -classifier provides a diagnostic for unaccusativity/unergativity, the same is not true of all Athapaskan languages. She shows that in Ahtna, the unaccusative/unergative distinction is problematic because one and the same verb can occur in different structures, depending on the properties of the noun involved.

Abbreviations are as follows: NPF = ni- perfective prefix, PERF = perfective stem, SPF = si-perfective prefix, YPF = yi- (= ghi-) perfective prefix, IMP = imperfective (zero-marked) prefix, CI = continuative imperfective stem, and PROG = progressive prefix or stem.

Examples with 3rd person subjects are discussed in section 4.3.

Note that the classifier /ɬ/ is not always visible in the surface form due to phonological interactions with the verb stem.

Note, however, that Young and Morgan (1987:143) suggest the d(i)- of the agentive passive is not in position 6, but rather part of a “compound subject pronoun” consisting of the position 5 indefinite subject ‘a-’, and di- meaning ‘person’. This analysis is highly suspect considering no other
compound subject prefixes occur. Hoijer (1948:256) describes the $di$- prefix found in the agentive passive as “a prefix of unknown meaning” found in the position following the indefinite subject ‘$a$-.’

11 I refer the interested reader to Alsina (1993; 1997) for a more detailed discussion.

12 This view contrasts with some analyses of causatives where the theta role is assigned to a “causing event”. See, for example, Ritter and Rosen (1998).

13 As previously mentioned, in (26) yi- appears as i- for phonological reasons.

14 Thanks to an anonymous reviewer for this suggestion.

15 It is important to note that although the bi- sentences are often given a passive gloss in English, this is an active sentence and not a passive one; an independent passive construction exists in Navajo.

16 There are cases where the one overt nominal can be interpreted as the subject rather than the object. This results from the semantics of the verb involved, as noted by Willie (1991). Consider the following example.

   (i) ‘Ashkii yiyííbíí.’

   boy 3.3.picked round objects

   ‘The boy picked them (c.f. berries).’ (Willie 1991:61)

Here, the overt nominal ‘boy’ is interpreted as the subject, since it is not possible for berries to pick boys. Thanks to an anonymous reviewer for pointing this out.

17 Hale (1973) was also the first to point out that the yi-/bi- alternation seems to be sensitive to an animacy hierarchy. This aspect of the construction will not concern us here.

18 ‘The boy, the girl saw him,’ is an example of a comparable left-dislocation in English.

19 It should be noted, however, that there are conflicting uses of the terms subject/object in previous analyses. For example, while some analyses treat the yi-/bi- alternation as an SOV-OSV alternation, others do not.

20 Note, however, that the sentence with two contrastive pronouns can be made grammatical if the focus particle $ga$’ is added after the first pronoun, as in (i).
(i)  
\[ shi\ ga' \ ni\ niisisdlyiyíídlqad \]

I  CF  you  2sObj-1sSubj-believed  
CF  CF  Foc-Toap-V  

‘(As for) me, it was you I believed.’

(Hale, Willie & Jelinek 2003:8)

21 By base predicate, I mean the most embedded predicate, i.e. the non-causative predicate.

22 Compare:  
\[ HastiinJohn\ bit'izíyítsq:dzíítáal. \]


23 Changing the order of the NPs ([baby-Ag/Top [woman-Ag/Foc [bi-V]]]) would not help, since ordering \textit{baby} before \textit{woman} would be a violation of the animacy hierarchy. Thanks to an anonymous reviewer for pointing this out.