

REMARKS ON THE SYNTAX OF THE NAVAJO VERB
PART I: PRELIMINARY OBSERVATIONS ON THE STRUCTURE OF THE VERB
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0. Introduction.

The study of the various grammatical systems of Navajo—including, among other things, pronominal and anaphoric coreference, person and number agreement, classificatory verb stem selection, and lexical argument structure—implicates in a serious way a detailed analysis of the Navajo verb word and, furthermore, both (a) the structural relations which hold within the verb word, and (b) the grammatical connections between particular parts of the verb word and other parts of the sentence in which the verb appears. In this essay, we will attempt to give an account of a portion of this notoriously complex domain of Navajo grammar, with special focus on two aspects of it: (i) the internal organization and arrangement of the morphological elements which make up the verb word; and (ii) the agreement relations which hold between certain components internal to the verb and the grammatical arguments (e.g., subject, object) which the verb selects in accordance with its lexical properties.

Due to the scholarship of Edward Sapir, Harry Hoijer, and the enormously productive team of Robert Young and William Morgan, it is well known that the Navajo verb word consists of a stem preceded by prefixes belonging to specific categories (voice, agreement, mode, aspect, etc.) and that these are arranged in a fixed relative order. Proceeding leftward from the stem, the so-called "classifier" (a voice, or transitivity, marker) occupies the position immediately preceding the stem. Immediately to the left of this is the subject agreement morphology, abbreviated and glossed here as AGRs. Next, immediately preceding the subject marker, is the mode complex, abbreviated M, a fundamental and obligatory component of the Navajo inflectional system; the morphology appearing in this position realizes the perfective, imperfective, usitative, optative, and progressive modes of Navajo. The position immediately to the left of mode is occupied by morphology realizing a truly impressive array of aspectual, thematic, and adverbial notions, including among many others the inceptive, seriative, and terminative aspects. While this collection of elements is uniform in terms of the position in which it appears, it is not uniform semantically and there is no particular name which is appropriate for it; consequently, we will simply label it by means of the letter E, a mnemonic suggesting "edge", "edge of event" in honor of the two aspectual prefixes *d-* 'inceptive', and *n-* 'terminative', aspects relating to the edges of actions or events. Although this position is heterogeneous in nature, it figures as an important one in the grammatical structure of the verb. Preceding this position, a so-called "deictic" subject marker may appear—e.g., the indefinite *'-* (generally cited as *'a-* in Young and Morgan, 1987, etc.), and the renowned Navajo fourth person *j-* (*ji-*). And to the left of this is the position in which object agreement appears (AGRo). This gives six relative prefix positions counting leftward from the stem. In a given verb one or several positions may in fact be empty, but when a prefix does appear, it will (with rare and special exceptions) appear in a fixed position relative to the other prefixes in the word—thus, for example, the classifier will always be to the right of any other prefix, the subject agreement prefix will always

precede the classifier, and it will follow all other prefixes; and mode always follows (i.e., appears to the right of) aspect; and so on for the entire verb word.¹

Of course, scholars who know the works of Young and Morgan know further that this is not all there is to the Navajo prefix system. There exists in addition a variety of more loosely attached "proclitic" elements preceding the object position, including the distributive plural marker *da-*, the iterative *ná-*, and an array (even more impressive than that found in E position) of adverbial, thematic, and postpositional proclitics. These occur in the reverse order to that in which they were just listed—that is to say, *da-* follows, *ná-* and the latter follows the adverbials, giving three relative proclitic positions.

It was an important discovery in Athabaskan linguistics, probably due initially to Fang Kuei Li, that there is a fundamental divide between the three positions just mentioned and the remainder of the verb word. In contrast to the adverbial, thematic and postpositional proclitics, for example, morphemes occupying the six prefix positions enumerated earlier are characterized (i) by much less segmental variety in their phonological makeup (glottalized stops do not occur in them, for example, and the favorite surface vowel in these six prefix positions is /i/ (the Navajo counterpart to the schwa vowel found in certain other Athabaskan languages), generally epenthetic with consonantal prefixes; the other vowels of Navajo appear only secondarily in these positions, through assimilation or other phonological processes); and (ii) they are characterized by much greater phonological fusion between them, often completely obscuring morpheme boundaries. Athabaskanists refer to the relatively loosely attached proclitics as "disjunct prefixes", and the more "fused" elements occupying the six positions preceding the verb stem are called "conjunct prefixes". The boundary between the two is called the "conjunct/disjunct boundary" (symbolized #), and its phonological significance has been described in detail by, among others, Richard Stanley and Jim Kari. In our usage here, we will endeavor to maintain a terminological distinction between the disjunct and conjunct elements, calling the former *proclitics* and the latter (*conjunct*) *prefixes*.

1. The lexical and functional extended projection of an intransitive verb.

Let us consider now an actual verb word of Navajo, using as an example the verb which appears in the following sentence from Young and Morgan (1987):

- (1) Kóhoot'ééd²á'á' naalyéhé bá hooghandi déshnish. (Y&M 87D:337)
'I started working at the trading post last year.'

The verb word *déshnish* can, of course, stand as a complete sentence, without an overt argument in subject position. However, since a part of our task is to show how a verb is related to its arguments, we will restore the first person singular subject for expository purposes, as follows:

¹Prominent exceptions to this strict relative ordering involve cases in which, for purely morphophonological reasons, a prefix (with ' - onset) moves out of its basic position to "dock" on the consonant of a prefix to its right, moving past the prefix which normally follows it.

- (2) Shí déshnish.
'I started working.'

The full sentence (1) is given simply to provide an appropriate context for the verb word. But it is the material appearing in the simplified sentence (2) that we take to be the focus of our attention here. The verb word itself contains the stem, the l-classifier, the first person singular agreement, the s-perfective mode, and the inceptive aspect d-:²

- | | | | | | |
|-----|----|--------|------|--------------|-------|
| (3) | E | M(ODE) | AGRS | CL(ASSIFIER) | STEM |
| | d- | s- | -sh- | -l- | -nish |

The internal structure of the conjunct portion of the Navajo verb is greatly masked by the phonological processes which derive the surface form of the word, but it is generally agreed that the elements indicated in (3) are in fact present in the word *déshnish*.³

We will entertain here the hypothesis that the Navajo verb is fundamentally a *syntactic* construction, not merely a composite derived by placing morphemes in a linear arrangement from right to left or left to right, independently of syntactic relationships. With this assumption, we follow in spirit the tradition represented in Speas (1990, Ch. 4). If we are correct in this assumption, then it follows that the elements which go to make up the Navajo verb bear certain structural and selectional relations to one another, relations akin to those which hold, for example, between a verb and its object, between a subject and a predicate, or between an auxiliary and the predicate which it selects. Structurally, these associations involve the standard relations involving lexical and functional heads, their categorial projections, their sisters, the sisters of their projections, and their adjuncts. Customarily, we refer to the sister of a head as its *complement*, and to the sister of a projection of a head as its *specifier*.

²Conjunct prefixes which alternate between a form consisting of a simple consonantal onset C- and a syllabic form CV- with the epenthetic vowel [i] will generally be cited by means of the consonant alone, i.e., as C-. Thus, the inceptive aspect is cited as d-, rather than di-. Some conjunct prefixes induce rounding in the vowel of their syllabic forms; these will be cited as Cw-, rather than Co-; w in this usage symbolizes the rounding feature associated with the consonant and sometimes spread onto the following vowel, as in *honiidoii* 'it (the area) got warm', with areal prefix *ho-*, abstractly *hw-*, cf. *hweesh²i* 'I see it (area)', in which the prefix reveals its true character, i.e., rounded h.

³For simplicity of exposition, a part of the Mode complex is left out of the representation in (3); this is the perfective mode-aspect. The perfective may have the abstract form -n- (cf. Stanley, 1969). Under appropriate conditions, the perfective morpheme is realized as high tone on the vowel of the syllable introduced by one of the Mode prefixes, *gh-*, *n-*, or *s-*, giving *ghí-* (written *yí-*), *ní-*, and *sí-* (*sé-* in the first person singular; as in (2) of the text, where /s/ is incidentally deleted in contact with preceding d- of Asp). Under other conditions the perfective is simply non-overt, or else produces phonological effects of some other sort. The classifiers interact with mode in an intimate fashion to determine the surface forms of the perfective, as the tables given throughout Young and Morgan (1987D) amply testify (cf. also Stanley, 1969; and Kari, 1976).

Joyce McDonough, arguing from the point of view of Navajo phonology, has made the important discovery that the Mode complex is a head in its own right (McDonough, 1997). In our terms, it is a functional head which *selects* the verbal head. That is to say, the lexical head V(erb) is the complement (and sister) of the functional head M(ode). In other words, M functions as an auxiliary, specifying the mode of the verbal construction. The structural relations between M and V can be expressed abstractly by means of a conventional tree diagram, as in (4):

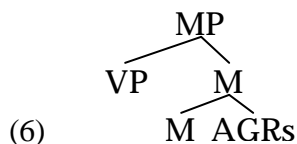


The head of the construction is M, and its complement is V. We express the head relation by projecting the category of the head to the node which dominates the tree as a whole, as in (4), in which M is shown to be the head. In other words, M projects its category to the phrasal node (also symbolized M here) which dominates it and its complement V; V itself is the complement of the head M by virtue of being its sister (i.e., by being dominated by exactly the same nodes, M in this case).

Let us pursue this idea for Navajo. Essentially what is involved here is the claim that M is a head which (i) selects a verbal projection, i.e., a verb phrase, as its complement and which (ii) itself projects a phrase containing the head (M itself) and its complement. We have not explicitly indicated in (4) that "phrases" are involved, but we understand the projections of a category from a head are phrases, and it is customary to express this notationally, e.g., as MP (for Mode phrase), VP (for verb phrase), or XP (a variable ranging over phrases of all types)—typically XP is used for the "maximal projection" of a category, while the prime notation is used for intermediate projections, e.g., V' for a non-maximal projection from the lexical head V, and so on. With this amendment, our structure now appears as in (5):



What exactly is in M? In the case of our example verb, *déshnish* 'I began working', we know that the Mode is s-perfective. Thus, M contains at least the s- element and the perfective element. Let us assume that those elements together make up M. Now it is very clear that subject agreement (AGRs) is tightly bound to M phonologically. Let us follow McDonough in assuming that AGRs is in some sense "attached to" M. Specifically, let us say that AGRs is a functional head *adjoined* to M, as in (6):



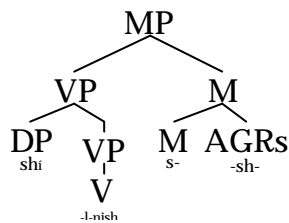
Notationally, adjunction is expressed by representing the two "segments" of the host node (M in this case) identically—this is a notational convention designed to reflect the fact that there is just

one node involved; the two apparent M's in (6) are in reality a *single* category depicted as a pair of identical nodes because of the constraints inherent in the two-dimensional graphic portrayals we are accustomed to using.

Turning now to the verbal projection. This is the lexical core of the verbal clause, of course, and it contains at least the verbal head V, the element traditionally termed the "stem" in Athabaskan linguistic literature. And we will assume that the classifier is a part of V as well, setting aside for the time being the exact nature of the classifier and its structural relation to the verb stem. But the verb phrase contains more than just the verbal head. The argument structure of the verb is expressed in VP. Thus, if the verb is transitive, the verb takes an object, appearing structurally as its complement and sister in the simplest case. The verb phrase generally functions as a predicate and, accordingly, takes a subject. The latter appears as an adjunct to the VP projected by the verb. In our example, the verb is intransitive, and so has no object. It takes a subject, of course, realized by the first person singular pronoun *shí* 'I'. Pronouns belong to the category D(eterminer), projecting the phrasal type DP.

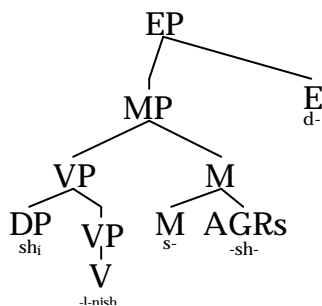
At this point, we have the following partial structure for sentence (2):⁴

(7)



All that remains now is to introduce the inceptive aspect *d-* into the structure. Here again, we assume that we are dealing with a functional head, E, which selects MP as its complement and projects its category to the phrasal level, as in (8):

(8)



⁴The representation distinguishes VP from V in (7). But VP does not branch, in fact, so the head is both head and maximal projection there. We follow tradition, however, in depicting the projection from V to VP, though it is vacuous in the conception of phrase structure assumed here.

This has the verb organized into a single extended projection (in the sense of Grimshaw, 1991) which includes all of the elements which are required in a well-formed verbal sentence, exemplified in this case by (2). The verb itself projects to VP—this is the *lexical* projection of the verb. The *extended* projection of the verb includes the VP itself together with the *functional* projections which form the inflectional system necessarily present in a finite, appropriately inflected, Navajo verb. The functional categories which figure in the construction of a finite verb in Navajo are at least the two shown in (8), namely, M and E. The first of these selects VP as its complement and projects to the phrasal level MP, while the second, E, selects MP as its complement and projects to the phrasal level EP.

The configuration set out in (8) is *syntactic* in every sense of the word; it is a phrase structure, in short. We do not actually have the verb word, as yet. Moreover, (8) is abstract, in that the elements are arranged *hierarchically*, not linearly. Something further is required to get the pieces of the verb into a single word and into the linear order in which they appear in the pronounceable surface form represented in (2). Before turning to this problem, however, let us consider certain important properties of the hierarchical structure.

First, (8) expresses the fact that M takes the verbal projection as its complement, not the reverse; V does not select M. And this corresponds correctly to the general observation that auxiliary elements, cross-linguistically, select VP. The Navajo arrangement corresponds, for example, to the fact that the auxiliary of the English perfect construction, i.e., *have*, and the auxiliary of the English progressive, *be*, take the VP as their complements—these auxiliaries function, so to speak, as "main verbs", taking the lexical VP as their subordinate complements. The Navajo and English arrangements are fundamentally the same, with the functional categories higher in the structure than the lexical projection, the latter being structurally subordinate to the functional heads. Similarly, (8) expresses the fact that the functional category E takes MP as its complement. This corresponds to the fact that an aspectual verb, like *begin/start* in English, for example, appears as a main verb, selecting a partially inflected VP as its complement—e.g., in English, *begin working*, *begin to work*, in which the gerund, or *ing*-form, and the infinitive involve inflectional morphology corresponding in its essential nature to Navajo M.⁵ In summary, (8) expresses hierarchical relationships which are expected to hold in the extended projection of the verb of a natural language.

⁵It should be pointed out that the term "aspect" is used in a multiplicity of ways. We will in fact use the term in all its various senses, but the category E will be restricted in its use to refer to the class of elements taking MP as its complement and appearing in the corresponding position in the verb word—as noted, it includes the inceptive *d-* seen in (2), the seriative *h-*, the terminative *n-*, among others. In many Navajo verbal themes, E is merely a formal (or "thematic") element. We will assume, perhaps mistakenly, that E is always present in the Navajo verb, even when it is not overt—in the latter case, we will assume it is represented by the null head \emptyset . It is an established assumption in Navajo linguistics that M(ode) also has a \emptyset -alternant, hence the term \emptyset -imperfective. If we adopt these assumptions here, we are committed to the proposition that the Navajo verb uniformly exhibits the extended projection represented in (8), with V heading the lexical projection, M the first functional projection, and E the uppermost functional projection.

2. The agreement relation.

There is another important relation expressed in (8), namely, subject agreement. Let us define agreement in general as follows:

- (9) AGREEMENT
 Agreement is a relation between a head and an argument which
 it c-governs (simultaneously c-commands and governs).

A head which is relevant for agreement is one which carries agreement morphology. This is true of *M* in Navajo, by hypothesis, since that head bears AGRs. An agreement head, let us assume, *must* agree with an argument. Thus, *M* in (8) must agree with some argument. According to (9), a head agrees with an argument which it c-governs. The only argument around in this case is the subject DP, i.e., *shí* 'I'. Agreement will be successful if *M* c-governs the subject, in accordance with the following informal definition:

- (10) C-GOVERNMENT (GOVERNMENT AND C-COMMAND):
 A head *H* c-GOVERNS an argument *A* if:
 (i) *H* c-commands *A* and
 (ii) there is no *XP* which dominates *A* and not *H*, where *XP* is a
 barrier for *A*.

We will define the c-command relation in the widely accepted manner according to which a node *X* c-commands a node *Y* if the first node dominating *X* also dominates *Y*.

The relation which concerns us in (8), of course, is that holding between *M* and the subject DP. The c-command relation clearly holds here, since the node *MP*, which immediately dominates both *M* and *VP*, also dominates *DP*, the subject. *MP* does not immediately dominate *DP*, but that is not relevant. The question now is whether there is any barrier intervening between *M* and *DP*. If not, then the two requirements for c-government are satisfied, c-command and locality. The only potential barrier between *M* and *DP* is the node *VP* appearing in the path leading from *MP* to *DP*. But that cannot be a barrier, in fact, because it is merely a segment of the of the phrase level projection *VP*—that is to say, it is not a true maximal projection, not a true *XP* in the sense of (10) above. Thus, *M* c-governs *DP* and, by assumption, the agreement relation must hold between the two, given that *M* bears agreement morphology.⁶

Agreement is a "checking" relation (in the sense of Chomsky, 1995). In this instance, *M* and *DP shí* are necessarily checked for agreement, since the former c-governs the latter; the agreement relation is successful, since the *DP* is first person singular, and the agreement features adjoined to *M* are likewise first singular. Once this relation is established, it becomes

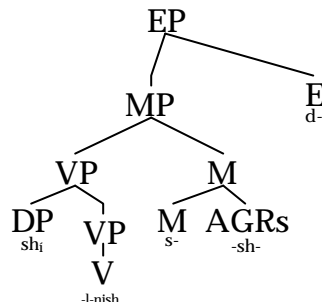
⁶Given that AGRs is an adjunct of *M*, AGRs *itself* c-governs *DP*. Thus, and "agreement head," like *M*, functions merely as a "host," a perch from which agreement morphology itself may c-govern the argument with which it is necessarily construed.

inaccessible to any other agreement relation involving those features, this being a general feature of checking relations. Thus, in this case, no other argument may enter into the person and number agreement relation with M, and conversely. If an object DP also appeared in the construction, it would necessarily enter into the agreement relation with some other agreement-bearing head if any, not with M, which is now inaccessible.

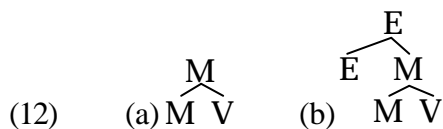
3. Head movement and the formation of the Navajo verb word.

Object agreement will be discussed in due course. First, however, we return to the problem of accounting for the actual formation of the Navajo verb and for the surface ordering of the elements contained within it. The internal hierarchical structure of the verb of (2), we claim, is properly expressed in (8), repeated here as (11), for convenience:

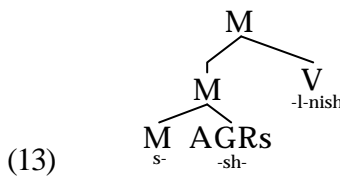
(11)



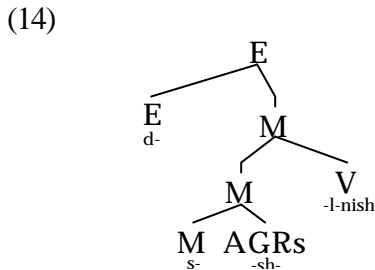
The final linear arrangement of the verb word, as it appears in (2) above, has the verb to the right of M (that is, to the right of the entire Mode complex), and it has the resulting complex finally to the right of E. The final result, furthermore, is a tightly integrated phonological word. This is accomplished by means of a processes called "head movement", by means of which a head is adjoined to a structurally higher head which governs it. In accordance with the Head Movement Constraint (Travis, 1984), a head moves to the *closest* head which governs it (no head can be skipped). Together with the fact that the moving head adjoins to the right of its host, the Head Movement Constraint and cyclic (bottom-up) application account for the observed linear ordering: F-M-V. Abstractly, the first application of head movement gives (12a), and the second gives (12b):



This is the essential structure of the verb word *déshnish* 'I started working'. Of course, in detail, there is more to it than this, since each head is a substructure containing specific morphological material. In detail, then, the first application derives (13):

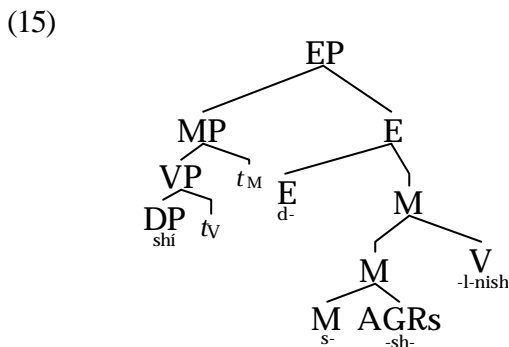


And the second application raises this complex head and right-adjoins it to E, giving:



This brings all of the elements of the verb word into the correct linear order and, in addition, has them dominated by a word-level (X^0) node, so that they jointly comprise a single complex head—it is this that accounts (in part) for the tight phonological structure characteristic of the conjunct prefixes and the stem. The phonological system of the language is responsible for deriving the actual pronunciation of the word (cf., Kari, 1976).

The structure of the sentence as a whole, after the parts of the verb are assembled into a single word, is depicted in (15):



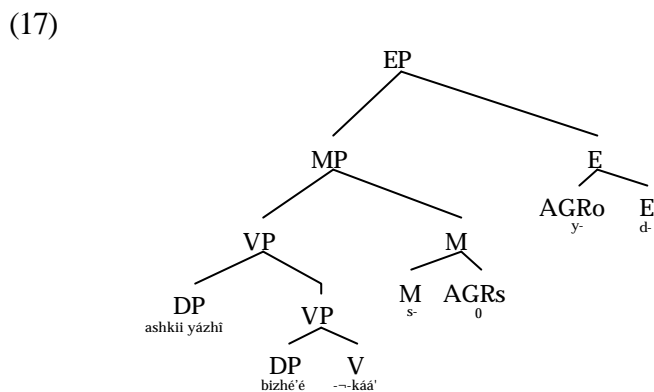
Provisionally, we have the subject DP remaining separate from the verb word, in the skeletal remainder of the original syntactic structure. The latter preserves the fundamental relations of the clause by virtue of the traces (t_V and t_M , traces of V and M, respectively) marking the feet of the chains defined by head movement. The configuration shown in (15) represents the surface syntactic organization of sentence (2), *shí déshnish*. Let us turn now to a transitive sentence and to the question of how object agreement is accomplished.

4. Object agreement.

The direct object of a transitive verb is its complement, under the assumptions of the framework assumed here. Consider the following sentence:

- (16) Dǐi ashkii yázhí bizhé'é yideeskáá'. (Y&M 87D:336)
 'This little boy took after his father (in habits and ways).'

The structure of this sentence, and of the verb word, is essentially the same as that of (2), with the exception that the verb is transitive, taking an object DP and implicating object agreement. Object agreement morphology occupied the left-most position in the verb word, directly in front of E. For the present, we will take it to be a right-adjunct to E. Accordingly, the structure of (16), prior to the head movement processes which form the surface verb word, is that presented in (17):



This represents the assumed hierarchical relations in the extended projection of the transitive verb. There are, however, two DP arguments which will enter into agreement relations with c-commanding heads; and there are two agreement-bearing heads, M and E. There are accordingly two questions to be concerned with: (i) Which DP agrees with which head? And (ii) will each DP be c-governed by an agreement-bearing head?

The answer to the first question, observationally at least, implicates the notion "closest head". An argument enters into the agreement relation with the closest agreement-bearing head. In (17), calculating distance by counting the number of branch-segments separating the two DPs from the two agreeing heads, it is the subject (the DP adjoined to VP) that enters into an agreement relation first; the subject is both (i) closer to M than the object is and (ii) closer to M than to E. Since M c-governs the subject, agreement is successful. Once that agreement relation is established, the subject and M are no longer accessible to further agreement relations. Consequently, the agreement-bearing head which is now closest to the object is E; and that, of course, is the agreement relation which is actually observed—AGRo, represented by y- [yí-], is the agreement morphology associated with the object in (16, 17), i.e., with the DP *bizhé'é* 'his father' appearing as the complement of the lexical head V.

Although the account just given is observationally correct, it is not *necessarily* correct, as it is based on a number of assumptions, any one of which could be wrong. The most

questionable assumption in this case has to do with the requirement that an argument entering into the agreement relation must be c-governed by the head with which it agrees. Does E in fact c-govern the object in (17)? If it does not, then either the entire structure is called into question, or else the suggested theory of agreement is in question, or both.

There is reason to believe that E does c-govern the object DP, despite the distance between them. First, the c-command requirement is satisfied in (17), since E clearly c-commands the object. The remaining question has to do with *barriers* which might intervene between E and the object. There are two maximal projections which intervene, i.e., which dominate the object but not E. These are MP and VP. Is there any mitigating circumstance which might render these categories transparent to government, cancelling their status as barriers? There are, in fact, three properties which these categories share which could, jointly or severally, contribute to their transparency, permitting E to c-govern the object:

- (18) TRANSPARENCY
- (a) VP, MP, and EP belong to the extended projection of V.
 - (b) There are dependency relations which hold between E, and M, between M and V, and between E and V.
 - (c) Head Movement connects the structural heads of VP, MP, and EP within a chain "headed" by the complex derived verb word dominated by E.⁷

The notion "Extended Projection" has been introduced and employed at various points in this discussion. In addition to the selectional relations involved in the Extended Projection itself, there are other dependency relations which have been noticed in the linguistic literature on Navajo (discussed at great length in Young and Morgan, 1987, among other places). For example, the inceptive aspect prefix *d-* enters into a special relation with M—generally, the inceptive requires the \emptyset -Imperfective and the s-Perfective modes. And M itself enters into a complex system of interdependencies with V, each mode being paired with a specific verb-stem alternant. The same is true of E and V, and there are also dependencies involving all three categories. Finally, head movement results in a construction which intimately connects the categories VP, MP, and EP. In the derived structure, all of these categories share the same complex head.

It seems reasonable, on the basis of these observations, to suppose that, within the Extended Projection of the verb, the maximal projections VP and MP are not barriers to c-government from E. If this is correct, then the object DP enters successfully into the agreement relation with E. The principle according to which an argument agrees with the closest c-

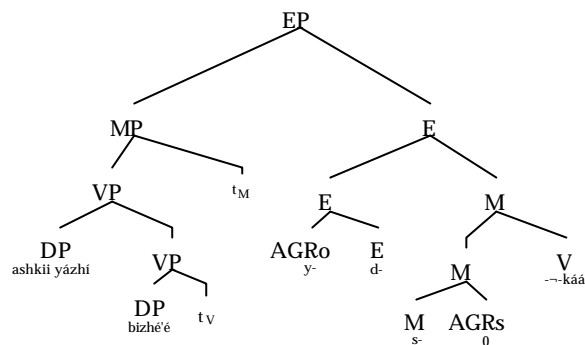
⁷The term "head" is customarily used in at least two distinct ways, (i) to refer to the structural head of a projection (e.g., according to which the V is the head of VP) and (ii) to refer to the end point of movement, the upper end of a movement chain, opposed to the "tail", or beginning point. It should perhaps be pointed out as well that the terms "beginning", "end", "before", "after", and the like, are used metaphorically in reference to grammatical processes and relations—no temporal implication is intended.

governing agreement-bearing head guarantees that agreement is properly apportioned to the subject and object arguments, so that the subject agrees with M and the object agrees with E.

5. The transitive verb word.

Head Movement applies in the transitive structure (17) as in the intransitive (15), in accordance with the Head Movement Constraint, thereby deriving the transitive verb word dominated by the X^0 -level category E, as in (18):

(18)



The subconfiguration dominated by the upper E-node constitutes the verb word *yideeskÁÁ'* 'he took after him, he started trailing it'. The structure embodies all of the elements which are believed to make up that word in an arrangement which, we assume, the morphophonology of Navajo will correctly resolve into the word as it appears in the surface string (16). Although the verb V itself is now removed from its original position in the VP projection, its argument structure is preserved in the derivation by virtue of the structure "left behind", which contains the DP arguments and the trace of the verb (t_V) in precisely the "original" structural organization, with DP object in the complement position and DP subject in the VP-adjoined position.

The Navajo phrase structure parameter according to which heads are final in sentential syntax will guarantee that the verb and its DP arguments, in a sentence of the type represented by (16), will conform to the pattern SOV. We have proposed that Navajo has at least one kind of movement—to wit, Head Movement, the principle according to which the verb word is composed. We have not as yet addressed the question of whether Navajo also has XP movement, i.e., movement of maximal projections (DP, for example). This could, in principle, give rise to exceptions to strict SOV order. We will take up this question, among others, in the second part of this discussion.

REMARKS ON THE SYNTAX OF THE NAVAJO VERB
PART II: A PRELIMINARY ACCOUNT OF THE CONJUNCT PREFIX SYSTEM
Ken Hale, MIT and Navajo Language Academy Linguistics Workshop
NCC, Tsaile, AZ 7-8/97

0. Introduction.

In Part I of this essay, it was proposed that an object can satisfy its agreement requirements "at a distance". In ordinary transitive verbs, object agreement morphology has been assigned as an adjunct to the highest functional head, E, and it is consequently separated from the object DP by two maximal projections in the extended projection of the verb, namely MP and VP. We assumed that this fact of separation did not matter, given the evident transparency of the extended projection, rendering MP and VP incapable of functioning as barriers for agreement. Thus, it was assumed, DP in object position can agree with E, despite the apparent distance.

We are not in a position to be sanguine about any such proposal as this, though it may be correct. There are other possibilities, and it is necessary at this time to be open to them and to avoid the danger of accepting too quickly an account that "seems to work". Long-distance agreement is controversial. If it is in fact possible, then the empirical evidence will ultimately show that. And if it is correct, it will conform to certain principles—for example, it could be that it is possible only under government, specifically c-government, as proposed in Part I. But it could well be that agreement is actually more constrained than that. It may require more than government; it may require some special kind of "locality", such that no other head may intervene structurally between the relevant DP and the head with which it agrees—if so, the object could not enter into the agreement relation with E, because M is "closer". If this is a purely structural matter, then M would project a barrier for the object, despite the fact that M is already in an agreement relation with the subject.

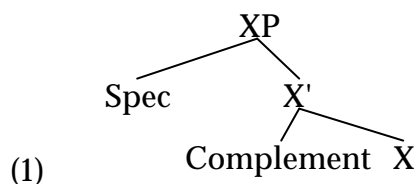
We inject this concern into the discussion now not to be perverse but rather to emphasize the fact that the study of Navajo syntax, and the study of syntax in general, for that matter, is not a settled question. Far from it. The study of syntax as a whole is a progressing and changing thing, rather than a static one, and it is important to keep in mind that any proposal is subject to question. There are no proposals which are final. In the contest among proposals, we can only say that some are relatively more explanatory, or relatively better supported by the data than others. This is a good thing, this indeterminacy—far

from causing the field to stagnate or founder, it is a major component of the driving force which pushes the field forward.⁸

In the following paragraphs, we consider the question of XP movement in Navajo, implicating the "specifier" (Spec), a structural position left out of the discussion so far.

1. The specifier position and DP movement.

Many categories project not only to the phrasal level which contains the head and its complement but also to a higher phrasal level which introduces the specifier. Notationally, the first level is customarily termed "intermediate" or "X-bar" and is symbolized X'. The higher level is typically (and perhaps universally) the maximal projection, i.e., the canonical phrasal projection, symbolized XP:



The labels Spec and Complement here merely indicate the positions in which the categories bearing those functions appear; otherwise, they have no theoretical significance. It is common, nonetheless, to refer to a DP sister to X as its complement, and to a DP sister to X' as the specifier of XP. However, these are simply ways of referring to the structural relations embodied in the projection from X. We will adopt this terminological practice, since it is widely used in linguistic literature.

In a standard transitive sentence like (2) below, there is no obvious reason to assume that the specifier position is being used by either of the arguments. And we have tacitly implied in Part I that the subject and object occupy their basic positions, the former appearing as the distinguished adjunct of VP, the latter the complement of V. The surface form gives no evidence of anything else:

- (2) Mósí tsídii yíní-ʔí. (Y&M 87G:65)
'The cat is looking at the bird.'

⁸It should be said that this attitude toward proposals applies *within* particular frameworks; it is not a defense of unbridled eclecticism in the use of distinct frameworks, however desirable or undesirable that may be on independent grounds. We are talking about proposals that are in fact *defined* within particular theoretical frameworks.

This is not so in (3), an alternative form of (2), in which the object appears in a position other than its basic complement position:

- (3) Tsídii mósí biní-’ʔǫ
 'The cat is looking at the bird.'
 'The bird is being looked at by the cat.'

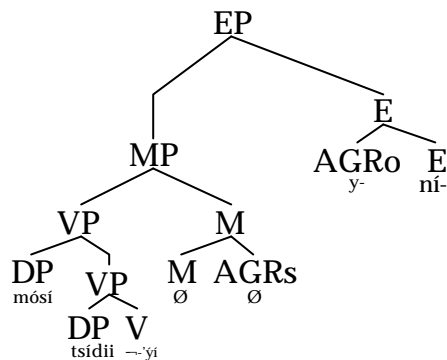
This sentence has the same meaning as (2), in the sense that the looker-lookee relations are the same in both sentences. But the object in (3) clearly does not occupy object position in surface structure—at least it does not do so if object position is taken to be "complement to the verb".

The construction in (3) is known by several names, including Subject-Object Inversion (SOI), Passive, and The Inverse Construction. The latter term has been suggested by Eloise Jelinek on the basis of comparative considerations involving analogous constructions in a wide variety of languages; this is probably the most accurate designation, and we will use it here, despite the fact that the term SOI is more widely used (cf., discussion and references in Young and Morgan, 1987G:65-66). In addition to its possible comparative and theoretical advantage, the term "Inverse" has a terminological advantage in that it has a traditional opposite—i.e., "Direct"—which can be handily applied to the more "basic" form in which the object follows the subject, in accordance with the SOV pattern generally considered basic.

The Inverse construction involves more than just the displacement of the object. The two constructions, differ in their object agreement morphology, *y*-being used in the Direct and *b*- being used in the Inverse. There are important details concerning the Inverse which we must give short shrift for the moment in order to move on to the structural question having to do with the position of the object DP in (3). We will, however, deal with some of these details as we proceed.

Consider now the abstract structure of (2), unaffected by any movement, whether of heads or of XPs:

(4)



This sentence is in the zero-imperfective, hence the appearance of \emptyset in M, and the subject is third person, hence \emptyset for AGRs. This is completely normal, and we assume that M and AGRs are present in the structure, despite their covert status. This structure exhibits an interesting property of the Navajo agreement system. In basic SOV transitive clauses in which object agreement appears overtly in E, there are certain dependencies which hold between subject agreement and object agreement. The dependency which interests us here holds when both the subject and the object are third person. In this situation, third person object agreement is represented by the prefix *y-*, realized as [yi-] in the verb word of (2). This element is glossed 3o by Young and Morgan (1987 and elsewhere), reflecting its obviative function which, like that of its parallel in Algonquian (where the term originates), regularly marks clausemate third persons as referentially distinct.

Morphologically speaking, the difference between the Direct and the Inverse consists in the appearance in the latter of *b-* instead of *y-* in the position occupied by object morphology. The prefix *b-* is in fact the *general* third person object agreement marker. The obviative *y-* is much more restricted, being limited strictly to situations in which a third person object is in the c-command domain of a clausemate third person subject. In all other situations, *b-* is the agreement marker which appears, where overt.⁹

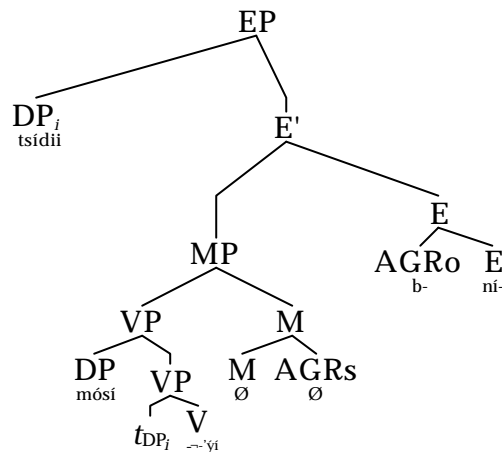
At this stage of our understanding, we can perhaps relate the Inverse to the circumstance just mentioned. In a 3-on-3 clause, i.e., one in which both the subject and object are third person, the object cannot remain in the c-command domain of the subject if the object agreement is *b-*. This may have to do with some principle according to which the obviation system must operate when the object appears within the c-command domain of the subject. Or it

⁹If a third person object appears in the c-command domain of a first, second, or fourth person subject, there are two principles which come into play. If the third person object morphology appears in E, then it is realized as \emptyset ; otherwise, it is realized as *b-*. This is the second of the subject-object agreement dependencies alluded to in the text.

might be, to follow suggestions by Margaret Speas and Eloise Jelinek, that the Inverse involves topicalization of the object, removing it from the domain in which obviation applies, forcing use of the general third person object prefix *b-*. We do not know, at this point, precisely what the mechanisms involved in the Inverse are, except that the object appears in a more prominent position, in relation to the subject, and the object morphology is correspondingly altered.

Let us now consider the inverse construction exemplified by (3). The object appears to the left of the subject in the linear representation. We have seen that, in general, if some element *X* is to the left of *Y*, it is higher than *Y*. Thus, we can assume that the object DP *tsídii* 'bird' occupies a position higher than the subject DP *mósi* 'cat'. Since the object is a phrasal category—i.e., it is a DP—we must assume that it is either an adjunct to a phrasal node (e.g., MP or EP), or else it is a Spec of one or another phrasal category. For the present, let us assume that its surface position is Spec of EP and, further, that it attains that position through the general movement rule Move Alpha, leaving a coindexed trace in its original position, as usual for relationships defined by movement:¹⁰

(5)



Third person object agreement morphology is represented here by *b-* [bi-], in accordance with the above mentioned Navajo principle of obviative agreement, which restricts the obviative *y-* to objects c-commanded by a clausemate third person subject.

The structure portrayed in (5) inspires a host of questions, including the following: (i) Why does the object raise? (ii) Does the object raise all the way to Spec of EP as claimed in (5)? (iii) Does it raise perhaps just to Spec of MP? (iv)

¹⁰Head Movement likewise implies coindexed traces; we will omit indices in head movement derivations for typographic convenience.

Does it raise first to Spec of MP and then to Spec of EP? (v) Does it raise at all, or is it base-generated in Spec of EP, with *b-* (and associated empty element in VP-internal object position) functioning as a "resumptive pronoun". All of these questions, and more, are legitimate; and all of them must be considered eventually. However, we will explore just one possible solution here, leaving certain options open—we lack the space and time to examine all possibilities at this point.

The first question is central, however, and *must* be addressed under the assumption that Move Alpha is responsible for the surface position of the object in (3). We must worry about this question because, in general, movement is "motivated"; there is a reason behind it.

We have mentioned one possible reason in passing, suggesting a scenario according to which the presence of *b-* in E forces the object to remove itself from the c-command domain of the subject (to satisfy the obviation requirement). This is perhaps descriptively adequate, but it leaves us with the question of why this should happen. Is *b-* really the cause of the movement, or is it instead just a by-product of it? If the latter is true, then the appearance of *b-* would be a result, not the cause, of the object moving out of the c-command domain of the subject. This seems more reasonable, given what people generally feel about the the Inverse Construction.

In previous Navajo Linguistics Workshops, notably the 1974 workshop at Kin *ɂichĩĩ*~, speakers of Navajo remarked that the Inverse placed the object in the position of topic (*agháadi baa yáji-ti'ígú*), an observation echoed, for example, in the work of Speas and Jelinek. Paul Platero has pointed out in addition that the object is especially prominent in relative clauses formed on the Inverse; a relative clause so formed unambiguously receives the interpretation according to which the fronted object is the relative DP (the logical head of the relative clause), thus *tsídii mósí biní- 'ínígú* 'the bird that the cat is looking at', not 'the cat that is looking at the bird' (cf., Hale, Jeanne, and Platero, 1977). This suggests that the motivation for raising the object DP to Spec of EP has something to do with getting it into a position in which it can function as "clausal topic".¹¹

2. The Extended Projection Principle (EPP).

¹¹The term "clausal topic" is coined here as an arbitrary label for the DP appearing in the highest Spec or adjunct position in the inflectional portion of the extended projection of V (i.e., in Navajo, the position dominated by EP or a segment of EP). It is to be contrasted with the "as for topic", involving a left-dislocated DP followed by *~áiyÄ*, e.g., *tsídii ~áiyÄ, mʔsi biní-~ö* 'as for the bird, the cat is looking at it.'

Although it is not fully understood, it seems to be a general principle of natural language that *every clause must have a subject*. That is to say, the construction comprised of a verb and that portion of its extended projection which includes its inflections (M and E) forms a predicate and, consequently, must be predicated of a subject. For predication to take place, the predicate must be c-commanded by a subject and, furthermore, it must be "local" in relation to the subject (i.e., not separated therefrom by too many nodes).¹² If this condition is satisfied, then the EPP is itself satisfied:

(6) THE EXTENDED PROJECTION PRINCIPLE (EPP):

A verb and its inflectional projection is a predicate and must be predicated of a subject.

In (5) above, the raised object occupies precisely the position in which E' can be predicated of it (a relation sometimes symbolized by coindexing, as in Williams, 1980). Since E' is, by definition a predicate, it must be predicated of DP *tsídii* 'bird'.¹³ We propose that the EPP is a principle motivation for movement to Spec of EP. There may be more to it than this, in the case of the Inverse, but for the moment let us concentrate on the implications of the EPP.

In our discussion of the Direct form exemplified by (2) and diagrammed in (4), we imply that no DP movement takes place there. But, if so, then the structure violates the EPP, since the inflectional projection is not predicated of any subject—it can't be, since no DP c-commands it. The verbal subject is too low in the structure and, while it functions properly as the subject argument of the verb, it cannot function as the subject of the clause.¹⁴ This suggests, of course,

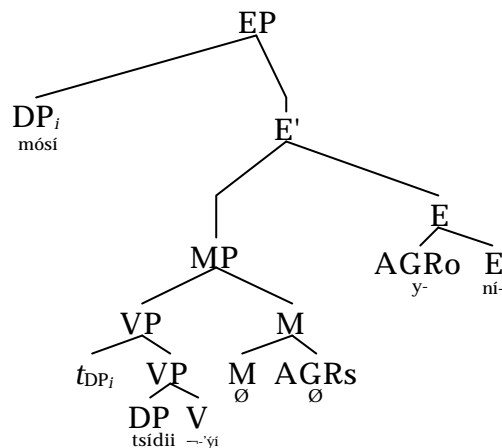
¹²We will adopt the suggestion of Williams (1980) according to which the predicate must be c-subjacent to the subject, where c-subjacency is met if there is no more than one node which dominates the predicate and not the subject.

¹³It is probably incorrect to speak of E' as a predicate in isolation from its subject. E' outside the predication relation, is, so to speak, a "potential predicate", a construct which must enter into the predication relation with a subject in order to form a well formed clause.

¹⁴There are two distinct notions of the term "subject" in use here. The EPP requires that the clause have a subject. The Projection Principle requires that certain verbs have an external argument, i.e., the argument which appears as the distinguished adjunct of VP. This is also termed a "subject", specifically the subject (equivalently, the external argument) of the verb. We are assuming, for the present at least, that *mósi* 'cat' is the external argument and subject of the verb in both (2) and (3). This latter conception of "subject" pertains to the lexical argument structure of the verb. And this may or may not coincide with the notion "subject of the clause". Subject in *this* sense refers to the DP (or other appropriate category) of which a fully inflected verbal projection is predicated, as required by the EPP—as in (5), with E' predicated of DP *tsídii*, in accordance with (6).

that the subject DP in (2), i.e., *mósi* 'cat', is actually raised to Spec of EP in that sentence, as in (7):

(7)



Although there is no surface evidence in (2) itself suggesting that the subject has raised to Spec of EP, since the linear order is the same in any case, the EPP requires that E' have a subject. Consequently, if the EPP is a genuine principle of language, then we must assume that Move Alpha has applied in (2), as indicated in (7). And if the EPP is real, evidence for it will undoubtedly come to light. One bit of evidence has already emerged, given our assumptions—namely, the evident use of the Spec of EP in the Inverse construction (3), as diagrammed in (5).

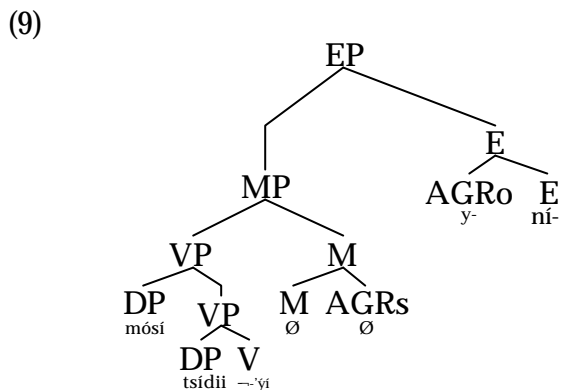
We turn now to the question raised in the beginning of this discussion, namely, the conditions on agreement. This will lead us to answer a question not yet posed here—to wit, the question of whether Spec of MP is employed in Navajo.

3. The conditions on the agreement relation.

We have assumed up to this point that the agreement relation between an argument DP and an agreement-bearing head can be successfully established if the head c-governs the DP. A more restrictive theory might require in addition that the relation be maximally local, where "maximally local" is to be understood as follows:

- (8) **MAXIMUM LOCALITY (CLOSEST):**
 DP may enter into the agreement relation with an agreement-bearing head H if: (i) H c-governs DP and, (ii) H is the closest head to DP, where H is closest if there is no other head H* such that H* c-governs DP and H* does not c-command H.

This says, in effect, that DP and H can agree if H c-governs DP and there is no other head intervening between the two. Consider again the diagram (4), repeated here as (9):



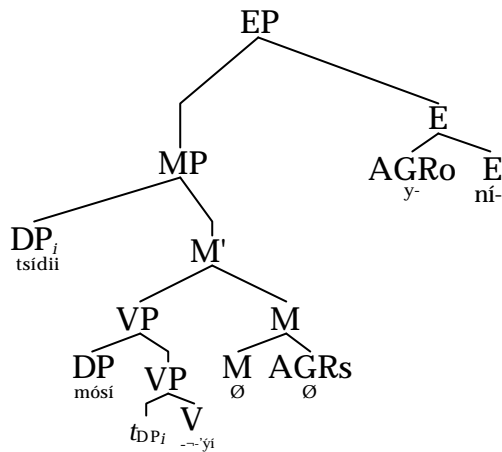
And consider first the object DP, i.e., *tsidii* 'bird'. The closest c-governing head is V, so DP *tsidii* cannot enter into an agreement relation with either of the two agreement-bearing heads, M or E. We will see in a moment how this DP eventually finds an agreement partner. But first, let us move to the subject DP, *mósi* 'cat'. The closest agreement bearing head for this DP is M; there is no other head that is closer; the verb, V, is not relevant, since it does not c-govern the subject, and E is also irrelevant, since it is higher up in the structure than M, hence farther away. Consequently, we can take the agreement relation to be established between the subject DP and M; this pair of terms {DP_{subj}, M} is therefore frozen, inaccessible for any other agreement relation involving the features person and number (and gender).¹⁵

Now let us return to the object DP. An object DP must enter into an agreement relation with an agreement-bearing head. Since the verb (V) is not an agreement-bearing head in Navajo, by hypothesis, and since M is neither the closest head nor an available head, the object DP in (9) cannot enter into the necessary relation in its basic position, i.e., complement of V. Move Alpha is

¹⁵The category "gender" does not normally come to mind in considerations of subject and object agreement in Navajo, but the category is in fact relevant in the language since the contrast between entity and space is distinguished in the agreement system—thus, *tsidii yish-ō* 'I see the bird' versus *bikooh gʔyaa hweesh-ō* 'I see down the arroyo'.

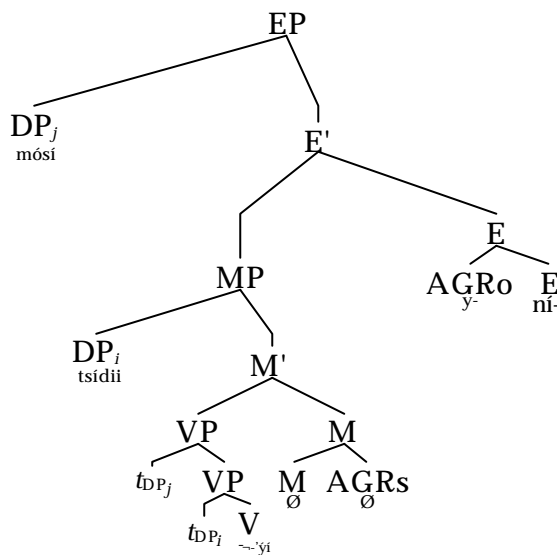
available, of course, and can freely apply, other things being equal. Suppose the object DP moves to Spec of MP, as shown in (10):

(10)



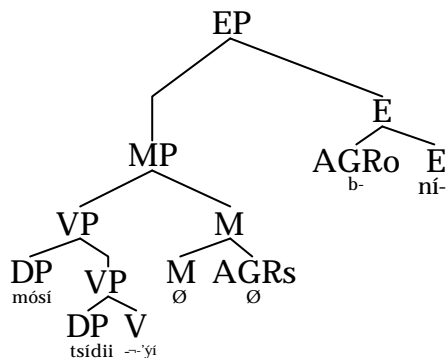
In this position, obviously, the object stands in the appropriate structural relation to enter into the agreement relation with E. The latter is the closest c-governor of DP and, moreover, it is an agreement-bearing head. All that remains now is to satisfy the Extended Projection Principle by moving some DP into Spec of DP. Since the third person obviative agreement morphology *y-* appears in E, we can at the same time satisfy the requirement that the subject c-command the object in the obviative by raising the subject into Spec of EP:

(11)



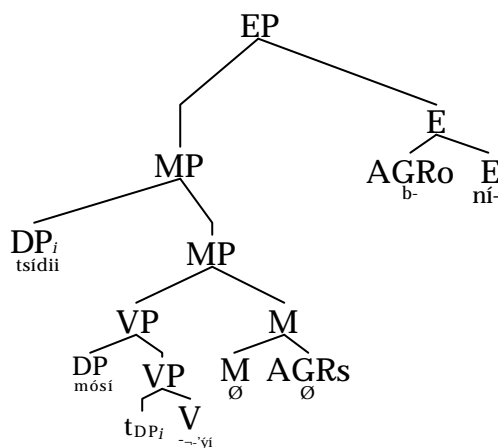
Now consider the Inverse construction exemplified by (3), with the d-structure representation in (12):

(12)



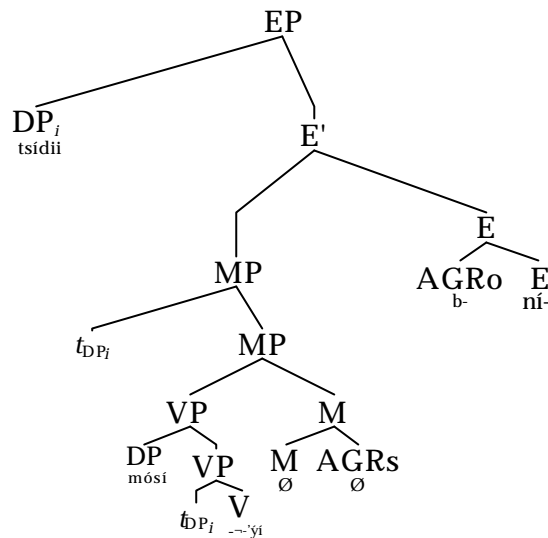
The external argument of the verb—i.e., the subject DP *mósi* 'cat'—enters into the agreement relation with M, that being both the closest head and an agreement-bearing head. The internal argument of the verb—i.e., the object DP *tsidii* 'bird'—cannot enter into an agreement relation in its d-structure position; it must move to reach an agreement partner. Now, eventually it must move to Spec of EP, to satisfy the EPP. But it cannot do that in one step, because if it did, it would fail to be c-governed by an agreement-bearing head. Therefore, it must move to Spec of MP, as shown in (13). At that point it is in a position to enter into the agreement relation with E:

(13)



To satisfy the EPP, some argument must raise to spec of EP. To derive sentence (3), of course, it is the object DP that raises, and this is required in addition by the fact that the plain third person agreement morphology, *b-*, appears in E. Thus (4) below accords with the observation that the general, or plain, third person object agreement morphology appears in all circumstances except those in which a third person subject c-commands the object:

(14)



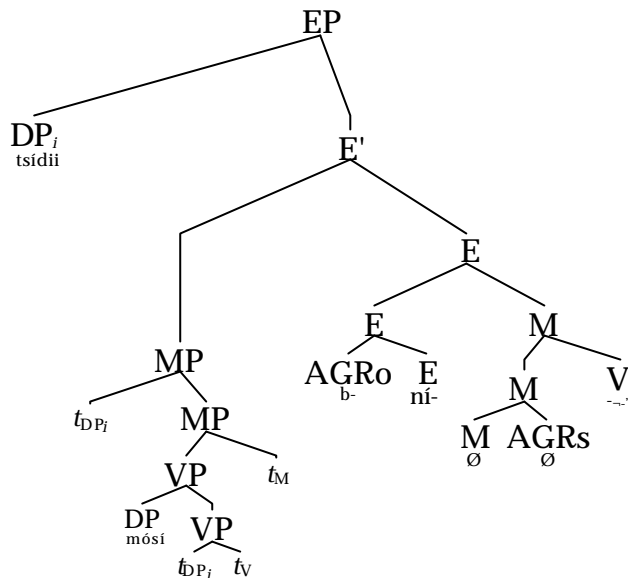
It is legitimate to ask why we have imposed a further condition on the agreement relation, namely, the locality requirement which permits agreement between DP and a head only if the latter is the closest head (and in addition is an agreement-bearing head). This is a legitimate question, perhaps, because the extra condition could be seen as adding cost to the grammar; and, in the case of a derivation like (14), it forces the object to undergo an "extra" movement, also a cost, possibly.

However, there is a powerful reason why the locality condition is desirable—and, in fact, a theoretical imperative. It narrows the range of possible grammars. Without the locality condition, the set of possible grammars could include members which do not observe locality as well as members which do—permitting two kinds of agreement systems. With the locality condition, the set of possible grammars can include only members which observe locality—giving just one kind of agreement system. This is a good result, assuming that narrowing the range of possible grammatical phenomena puts us closer to an understanding of the universal grammatical capacity of human beings. The apparent complexity introduced by the locality condition is only apparent. The condition itself, if it is a universal linguistic principle, costs nothing. And Move Alpha, also a general principle relating points in a syntactic structure, likewise costs nothing.

Head Movement is also without cost, being an instance of Move Alpha. In Navajo, we have been assuming that the parts of the verb word are bound morphemes and must, therefore, be assembled into a single word under the domination of an X⁰-node. This is accomplished in accordance with the Head Movement Constraint which ensures that a given head raises to the nearest

c-commanding head. The resulting derived structure in the case of the inverse is approximately as in (15):

(15)



This corresponds to the Inverse construction (3), repeated here as (16):

- (16) Tsídii mósí biní-ʔʒi
 'The cat is looking at the bird.'
 'The bird is being looked at by the cat.'

As a technical aside, it should be mentioned that our presentation of postulated Navajo derivations has followed the tradition which recognizes the syntactic levels of d-structure (exemplified, for example, by (13) above) and s-structure (exemplified by (16)). We will continue to present derivations in this manner. However, these are ultimately fictions, artifacts of an earlier tradition of generative grammar. It is rather apparent that derivations develop by establishing relations in a bottom-to-top, or cyclical manner—e.g., the verb and its complement are related first, then the VP and the lexical subject, then the full VP and Mode, at which point subject agreement can be checked, and so on. This manner of proceeding would be automatic, rather than stipulated, if the structure were composed in just this way—compose the verb and its complement, giving a verbal projection, VP; compose the VP with its subject, and so on. This conception of syntactic structure makes no reference to d-structure and no reference to s-structure. Instead, there are the processes of composition (called "Merge" in Chomsky, 1995) and Move (i.e., Move Alpha), the latter being a type of composition in which a constituent already introduced into the structure is merged with another constituent at a point higher in the

structure. Although the Merge-and-Move theory of syntax is at least conceptually superior, there is no great danger here in continuing to employ the more traditional (and relatively easy to follow) representations in which an s-structure is derived from a d-structure, the latter being the representation which expresses the lexical properties of heads (V, N, P, D, etc.).

4. The deictic subject prefixes.

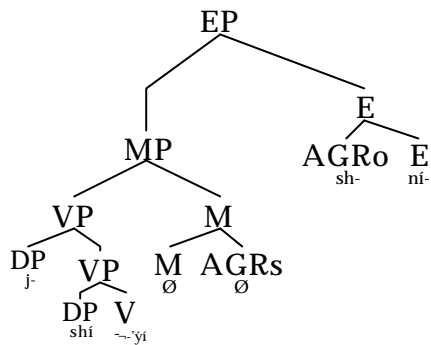
We have given a preliminary account of the syntax underlying all of the conjunct prefix positions of the Navajo verb, with one exception, the so-called deictic subject occurring between AGRo and E, the head of EP. This is position V in the system employed by Young and Morgan (1987), and it is the position assigned to the fourth person subject *j*-, among other things. Its position relative to AGRo and E is clearly illustrated in (16) in which these elements are represented overtly (with *j*- in its fricative alternant [zh-], as usual immediately before a consonant):

- (16) Shizhní-’ʔí
'One looks at me.'

The position occupied by the so-called deictics is not a standard agreement position for subjects. In fact, the *standard* agreement for subjects, AGRs in M, is zero when the subject is a deictic, just as when the subject is third person. We might take this to mean that the deictics are actually special instances of the category 'third person'. And pursuing this line of thinking, using the fourth person as an example, we might propose further that the deictic subject, *j*- in this case, is in reality a DP occupying syntactic subject position at d-structure, precluding the use of any other DP in that position, the prevailing situation in its use as an impersonal human subject:¹⁶

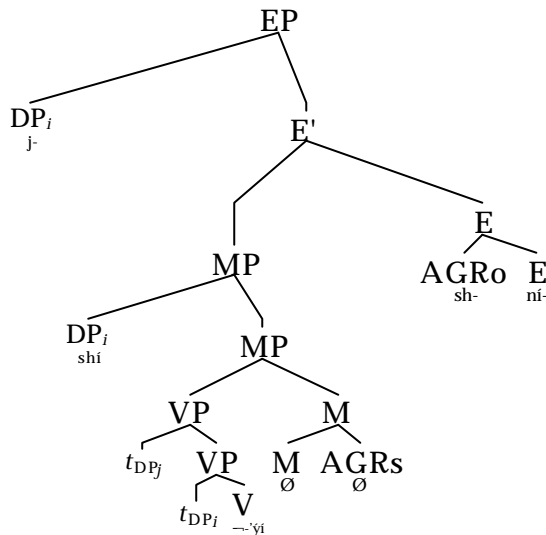
¹⁶There is also a use of the fourth person in which the corresponding argument position is occupied by an overt DP, either the fourth person pronoun *hó* or a full nominally based DP. This is found, for example, in stories, in which a main character is in the fourth person while a secondary character is in the third (cf., Young and Morgan, 1987C:76-77); here, the referential properties of the fourth person are identical to those of a normal third person—thus, the fourth person, like the third person, is construed with a DP argument which either introduces a discourse referent, or else must pick up a previously introduced referent, depending on the precise constituency of the DP—e.g., in third or fourth person, [_{DP} NP lái-] introduces a discourse referent, while [_{DP} NP] or *pro* must pick up a referent. The fourth person is also used deferentially in address (with in-laws of the opposite sex). In this latter use, and in the impersonal use, the fourth person is generally unaccompanied by any overt nominal with which it is construed. It is this use of fourth person which is compatible with the analysis suggested here. The use with overt nominals is a form of *agreement* and must be analyzed differently—e.g., perhaps with *j*-base-generated as an adjunct to E and coindexed with

(17)



The fourth person subject, a DP in the d-structure subject position (satisfying the lexical requirement of the verb that it have an external argument), enters into the agreement relation with M. The agreement relation is successful, we assume, since AGRs has zero agreement (and is therefore neither first or second person), as required by *j-*, which behaves in this respect like a third person.¹⁷ The first person object, *shí* 'I' when it is overtly expressed as a DP, must raise to Spec of MP to enter into the agreement relation with E, and the fourth person subject must raise to Spec of EP to satisfy the requirement that the inflected clause have a subject at s-structure:

(18)

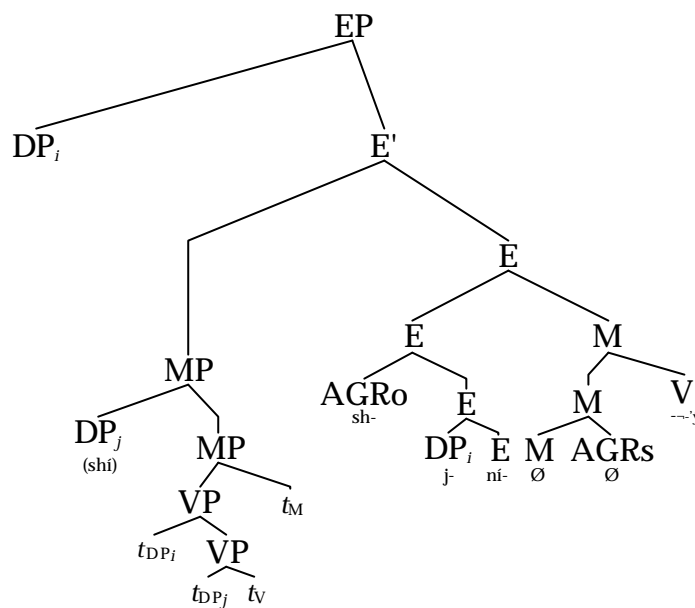


AGRs in M, as suggested by Paul Platero). The agreement relation between the "fourth person" DP and M would proceed as in the ordinary cases.

¹⁷The fourth person shares zero-AGRs with the third person. It does not behave like a third person in obviation, however—only the "true" third person (that realized pronominally as *bí*, for example) requires that a clausemate object in its c-command domain show obviative (*y-*) agreement.

Of course, the fourth person subject does not appear in Spec of EP. Rather, it appears as a prefix to E, i.e., to the head of the E-projection. Perhaps this is all that needs to be said. If *j*- has the lexical property that it is a prefix to E, it will necessarily assume that position, any other position would lead to an ill-formed structure. If this happens (by Move Alpha) in the morphological component, as opposed to syntax, then the trace resulting from the movement (assuming a trace remains) will not violate the requirement that it be bound. The suggested outcome, after Head Movement (raising V to M and M to E) is approximately as follows:¹⁸

(19)



Assuming that the linear position assigned to adjuncts and hosts in the process of assembling the verb word corresponds to the final order in the morphological structure, this accounts for the ordering of conjunct prefixes in relation to the stem. We now have a preliminary account of the conjunct portion of the Navajo verb. There is still one aspect of this part of the verb which we have not dealt with, beyond noting its position in the word, and that is the so-called classifier (Position IX in Young and Morgan). This is a complicated matter and involves a study of voice and argument structure. Our discussion of the classifier will be taken up when these matters are discussed. One element in deictic subject position, however, does implicate the classifier, namely, the indefinite subject in the so-called agentive passive, as in (20):

¹⁸It might be objected that a DP, being a phrase, cannot be adjoined to a head. But the DP in this case is also a head—this is the case in which a head is also a maximal projection. It qualifies as a head for the purposes of Head Movement.

- (20) (Shí) shidi'níl'ʔí.
 'I am being looked at.'
 'Someone is looking at me.'

The agentive passive morphology involves two things, (i) insertion of the d-classifier, seen here as the replacement of the \neg -classifier by the l-classifier; and (ii) the appearance of the agentive passive morphology \sim -d- between AGRo and E. In the example cited, the glottal component has metathesized rightward onto E ($n\hat{i}$), a common occurrence where E is overt, as here.

The agentive passive shares with the true passive the insertion of the d-classifier (cf., true passive *níl'ʔí* 'is looked at', lacking object agreement morphology). But it is not actually a passive in the full sense, since the lexical object remains an object at s-structure, entering into the object agreement relation in the usual way. Hence the object *shí* 'me' in (20) is construed with AGRo *sh-*, as expected in a fully transitive clause.

Our analysis of the agentive passive is essentially identical to that sketched above for the fourth person, in its use as a human impersonal subject. In the agentive passive, the d-structure subject position (distinguished adjunct of VP) is occupied by the agentive passive subject morphology \sim -d-. This necessarily raises to Spec of EP, to satisfy the EPP. The object raises to Spec of MP in order to enter into the agreement relation with E. In the morphology, \sim -d- is prefixed to E, i.e., to the head of EP, in the same manner as the fourth person impersonal *j-*.

There are two details that remain to be accounted for, (i) the d-component of the agentive passive prefix, and (ii) the d-effect associated with the agentive passive.

We begin with the second question. The d-effect, we suggest, is simply morphological doubling of the d-component of the agentive passive prefix itself; this element is simply copied as a prefix to V and, accordingly, is not actually the d-classifier at all, though it has the same effect phonologically. This is in keeping with the fact that the agentive passive, despite its traditional name, is not a true passive, since the clause remains morphosyntactically transitive. There are other instances of spontaneous morphological doubling in the Navajo verb system (e.g., the obviative third person object prefix *y-* is doubled when it precedes certain other elements, among them semelfactive E, realized *-ii-*, as in *yi-y-ii-ta* \neg , the semelfactive imperfective 3-on-3 form of the verb *-ta* \neg 'kick').

The d-component itself is somewhat mysterious, although the glottal component 'ʔ- is no mystery; it is clearly the indefinite subject (glossed 3i in Young and Morgan, 1987G:67-69). For the d-element, there is at least one interesting possibility. By hypothesis, the agentive passive morphology is assigned to the transitive subject, i.e., the argument occupying the external argument (subject) position at d-structure. This is the position in which the subject enters into the agreement relation with M. It is also the position in which the external argument of a transitive verb would be assigned ergative case, if Navajo were ergative. Eloise Jelinek has pointed out several times that Navajo exhibits ergative characteristics (e.g., the relative positioning of subject and object agreement morphology follows the ergative, not the accusative, pattern). The indefinite subject and object (3i) morphology also follows the ergative pattern:

- (21) THE ERGATIVE PATTERNING OF 3i MORPHOLOGY:
 (i) 'ʔ- = subject of intransitive, object of transitive;
 (ii) 'd- = subject of transitive.

If this is in fact a reflection of abstract Case, the pattern follows straightforwardly in the theory of Case developed in Bittner (1994; cf. also Bittner and Hale, 1996), assuming Navajo is ergative. If so, the d-element is a realization of the ergative case, otherwise non-overt in the language.

This concludes our preliminary survey of the conjunct prefix system of the Navajo verb in its syntactic aspect.

5. A brief note on the disjunct prefix system.

As the parts of the Navajo verb word are assembled, through Head Movement, material introduced as complements or adjuncts to VP are, so to speak, "left behind." This includes the subject and object arguments (where these are not morphologically dependent, like the elements discussed in the previous section), but it also includes other kinds of arguments, e.g., oblique case expressions (like *kintah-góó* 'to town'), postpositional phrases (like *ashkii bich'2i'* 'to the boy'), and a large number of "adverbial, thematic, and aspectual" elements variously assigned to positions I-III in Young and Morgan). Some of these elements, particularly the monomorphemic elements assigned to these positions are morphologically dependent and are traditionally called "prefixes". However, we will refer to them as "proclitics", to reflect the fact that they are rather loosely attached to what follows them (i.e., the syntactically assembled verb word) and, in addition, they are not categorially specific prefixes (unlike fourth person *j-*, for example, which is specifically a prefix to E). The morphological "instructions"

which come with the disjunct prefixes is merely that they are phonologically dependent upon whatever follows to the right. This is a phonological matter, not a syntactic one.

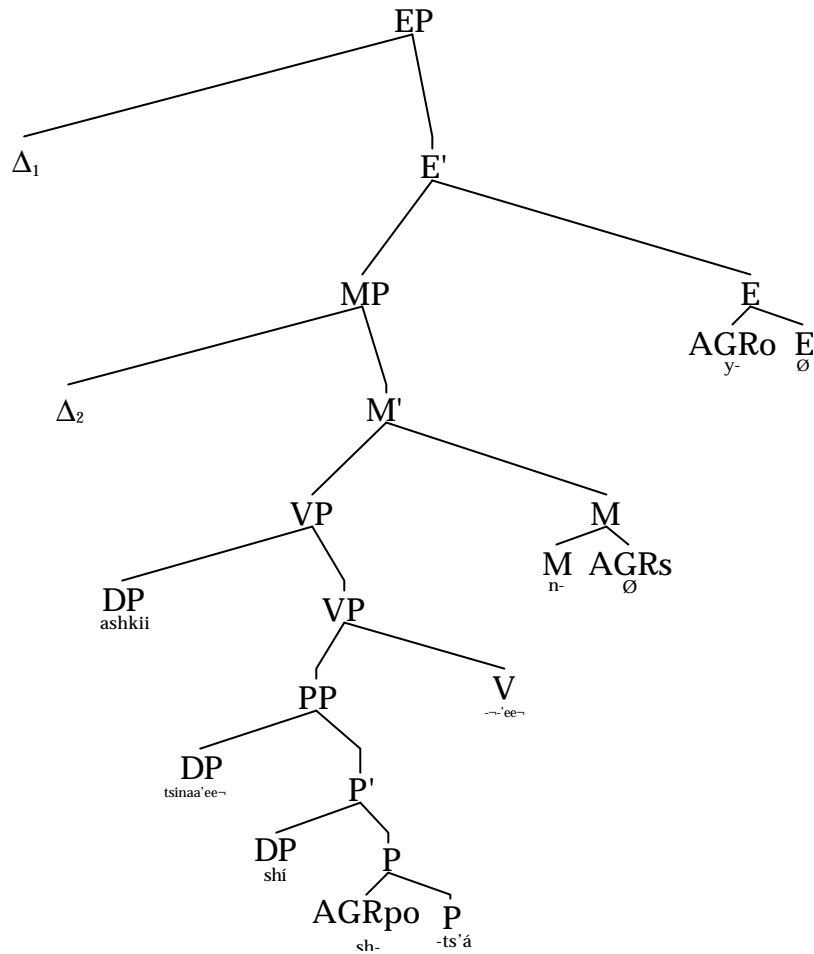
We will cite one example here, the postposition *-ts~Ä* 'away from', as illustrated in the sentences of (22):

(22) (a) *Tsinaa'ee¬ (shí) sits'áni'éeł.*
'The boat drifted away from me.'

(b) *Ashkii tsinaa'ee¬ (shí) sits'éini¬'éeł.*
'The boy rowed (lit., floated) the boat away from me.'

The verb in this case belongs to the class which freely enters into the transitivity alternation, with corresponding shift in the classifier, *-Ø-* in the intransitive, *-¬-* in the transitive. The proclitic portion of the verb word consists of the postposition *-ts'á*; its complement (*shí* 'me', in this instance) and its specifier (*tsinaa'ee¬* 'boat') are independent words and are not phonologically dependent. The postposition (P) projects the positions just enumerated, forming the postpositional phrase (PP); the latter bears the complement relation to the verb, as shown in (23), representing the transitive alternant (22b):

(23)

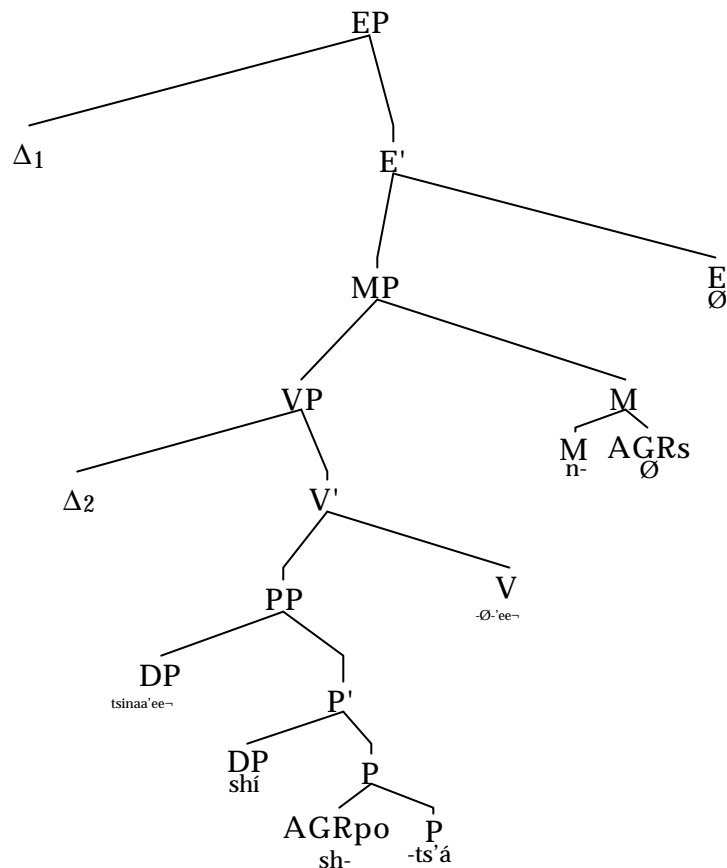


The s-structure is derived straightforwardly in the manner outlined in previous sections. The object of the postposition (i.e., the DP *shí* 'me') does not have to raise in order to enter into the required agreement relation, since P, the relevant agreement-bearing head is the closest c-governing head—so local agreement is achieved without movement. Likewise, the external argument of the verb, the DP *ashkii*, can satisfy its agreement requirements without resorting to movement, since M, the relevant agreement-bearing head is its closest c-governor. This DP does, however, raise for another reason—it raises to Δ_1 in order to satisfy the EPP requirement of E'. The specifier of PP, which is also the grammatical object of the transitive verb, cannot find an agreement partner locally and must, therefore raise to Δ_2 , i.e., Spec of MP, in order to enter into the agreement relation with E.

The intransitive alternant shows a similar derivation, with one noteworthy difference. As is generally the case with transitivity-alternating verbs, the intransitive alternant is unaccusative. That is to say, it has no external argument. Its s-structure subject is raised from an internal argument position,

specifically, from Spec of PP. The d-structure representation of the intransitive (22a) is approximately as follows:

(24)



The internal structure of the PP is exactly as before; the only difference is the absence of an external argument and the elements of transitivity, i.e., the \neg -classifier and AGRo in E. The object of the postposition satisfies its agreement requirements as before, without movement. And also as before, the DP in Spec of PP (*tsinaa'ee* \neg 'boat') must raise to enter into an agreement relation, since its closest c-governor is V, not an agreement-bearing head. In this instance, however, it does not raise to agree with E, but rather to agree with M, the only agreement-bearing head available and one which must, itself, enter into the agreement relation. This is achieved by raising to Δ_2 , Spec of VP. Finally, it raises from Δ_2 position, to Δ_1 , where the EPP requirements of E' are satisfied. In this way, an internal argument raises by Move Alpha to function as s-structure subject. This is canonical "unaccusative" derivation.

The head P (*-ts'á* 'away from'), or rather, the word formed by this head together with its object agreement inflection (in this case *si-ts'á* 'away from me') is phonologically dependent upon the following word; it is a *proclitic* to that word. It is written together with the following word and is traditionally classified as belonging to the disjunct system of the verb word (and

assigned to position I in Young and Morgan). That it appears in the initial portion of the verb word, and not some internal portion, follows from the fact that it is a complement to the verb and, consequently, is "left behind" when the verb word is assembled. Being the complement of the verb places it in the position immediately to the left of the assembled verb word. That it is phonologically dependent upon the assembled verb follows perhaps from factors having to do with the prosodic structure of the resulting sequence. That it is only weakly integrated with the assembled verb word follows, presumably, from the fact that the structural divide separating disjunct elements from any immediately following conjunct morpheme is as great as could be in any Navajo clause, assuming the structures proposed here.

REMARKS ON THE SYNTAX OF THE NAVAJO VERB
PART III: REMARKS ON PREDICATE ARGUMENT STRUCTURE AND THE \neg -CLASSIFIER
Ken Hale, MIT and Navajo Language Academy Linguistics Workshop
NCC, Tsailé, AZ 7-8/97

0. Introduction.

In the earlier parts of this discussion, a transitive verb stem together with the \neg -classifier was taken, as a unit, to be the head of the verbal projection. Accordingly, the classifier was not accorded any separate status, even where there was an obvious correlation with transitivity, as in the following pair, with the so-called \emptyset -classifier in the intransitive and the \neg -classifier in the corresponding transitive:

(1) (a) Tsinaa'ee \neg (shí) sits'ání'éeł.
'The boat drifted away from me.'

(b) Ashkii tsinaa'ee \neg (shí) sits'éini' \neg 'éeł.
'The boy rowed (lit., floated) the boat away from me.'

In the following discussion, we will present an account of some aspects of the Navajo expression of predicate argument structure, with particular attention to transitivity alternations of the type represented in (1) and, in addition, we will give a partial account of the \neg -classifier. The term "argument structure" is used here to refer to the syntactic configuration projected by a lexical item. It is the system of structural relations holding between heads (V, P, N, etc.) and arguments linked to them in the roster of syntactic properties listed for individual items in the lexicon. While a lexical entry is much more than this, of course, argument structure in the sense intended here is precisely this and nothing more.

Once defined in the manner suggested, argument structure can be seen to have a rather surprising property. The verbs of natural languages, generally the "richest" category in this regard, are extremely limited in the variety and complexity of argument structures they display. Few verbs have more than three arguments, and the range of generally recognized thematic (or semantic) roles associated with verbal arguments is rather small, numbering half a dozen or so. This impoverishment is in striking contrast to the syntactic structures of sentences, whose complexity is essentially without limit. It is a proper purpose of linguistic research to explain this fact, assuming that it is indeed a true fact of natural languages.

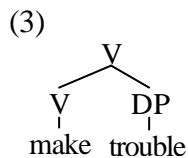
We will illustrate this restricted conception of argument structure first with some examples from English, starting with the simplest possible verb types in that language; then we will turn to Navajo.

1. Basic argument structure types.

The verbal projections of (2) below represent a good place to start the study of argument structures.

- (2)(a) make trouble
- (b) bake a cake
- (c) have puppies
- (d) build a house

The verbs which head these projections share a certain property, characteristic of the argument structure type which they represent—namely, the property that they take a complement (the object DP of the examples cited) and the structure they project does not include a specifier. We will refer to argument structures having this characteristic as “lp-monadic”. That is to say, the lexical projection (“lp”)—i.e., the argument structure configuration projected by the head—contains just one argument, i.e., the complement. The complement relation is defined as the unique sister to the head, as exemplified by the DP *trouble* in the configuration depicted in (3) below (where head, projection, domination, and sisterhood, not linear order, are the relevant structural features):



In sentential syntax, of course, these verbs are ordinarily thought of as dyadic, since they have both a subject and an object.¹⁹ We use the terms monadic, dyadic, etc., not in relation to sentential syntactic adicity but strictly in relation to the arguments (complements or specifiers, irrespective of morphosyntactic category) which must appear internal to the lexical configuration associated with a lexical item. For lexical items of the type represented in (2), the sentential syntactic subject (e.g., *the cowboys* in *the cowboys made trouble*) is an external argument, we claim, and therefore not an argument (specifier or complement) internal to the lexically projected configuration.²⁰

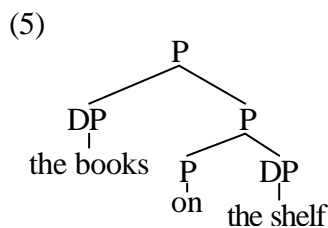
¹⁹The term “sentential syntax” is used here to refer to the syntactic structure assigned to a phrase or sentence involving both the lexical item and its arguments and also its “extended projection” (cf., Grimshaw, 1991) and including, therefore, the full range of functional categories and projections implicated in the formation of a sentence interpretable at PF and LF. The internal structure of a lexical projection is also properly speaking a “syntax”, but it is the structure included within the projection of the lexical head and is defined strictly in terms of heads and arguments.

²⁰The appearance of a sentential syntactic subject with predicates like those in (1) is forced by a general principle of grammar (cf., Chomsky, 1982; Rothstein, 1983) which, following an established tradition within generative grammar, we will refer to as the Extended Projection Principle (EPP). Following Bittner (1994; and see also Hale and Bittner, 1996) we will assume that the subject (whether external or raised from an internal position) enters into a “small clause” relation with the VP predicated of it (cf., Koopman and Sportiche, 1991)—it is structurally an adjunct to the VP and, moreover, a “distinguished adjunct” coindexed with the VP, a formal notation corresponding to predication (cf., Williams, 1980). In this view of the matter, an external subject, being an adjunct to VP, is in a minimal sense “internal” to VP, as in the “VP-internal Subject Hypothesis”, but it is not

In this latter respect, the situation represented by the argument structure type attributed to the verbs of (2) can be contrasted with the configurations projected by the prepositions in (4):

- (4)(a) (put) the books on the shelf
- (b) (get) the cows into the corral
- (c) (pound) nails into the wall
- (d) (drip) paint on the floor

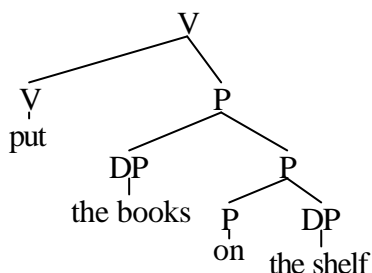
We are concerned here just with the structure following the parenthetic verb (itself irrelevant to the immediate issue). In each case, the relevant structure is headed by a preposition (e.g., *on*, *into*), and the structure illustrates fully the essential lexical character of heads of the type normally realized by prepositions in English. These elements have the property that they take both a complement (a DP in the present examples, *the shelf*, *the corral*, etc.) and a specifier (also a DP in these examples, *the books*, *the cows*, etc.). As usual, the complement is the unique sister of the head. The specifier is the unique sister of the initial projection of the head, i.e., the substructure formed by the head and the complement. This arrangement is “lp-dyadic”—that is to say, it is the structural configuration defined by a head which projects two internal argument positions, in accordance with its elemental lexical properties. The lp-dyadic structure projected by the preposition in (4a) is presented diagrammatically in (5):



The presence of a specifier argument, of course, is the essential structural difference between the dyadic lexical configuration of (5) and the monadic configuration of (3). While the verbs of (2), sharing the structure of (3), have a subject and are in that sense also dyadic, the subject is an external argument, not a specifier in the lexical configuration. The evidence for this lexical difference is straightforward. The structure depicted in (5) can—in its entirety, specifier and all—appear as the complement of a verbal head within a lexical projection. This is the enabling condition for an indefinite number of transitive verbs of “placement” or “location”, like *put* (*the books on the shelf*), and others (cf., (4) above):

(6)

internal to the lexical configuration projected by a lexical head, since it occupies neither a complement position nor a specifier position within that projection.



The argument structure of the lexical item *put* is a complex configuration consisting of a P-projection (dyadic), embedded as the complement within a V-projection (itself monadic). The specifier within the embedded P-projection will, in the normal course of events, appear as the grammatical object of the verb in sentential syntax (i.e., it will be assigned structural case, accusative, in the active voice and, in the passive, it will be forced to raise into the specifier position of an appropriate functional category).

Crucially, the specifier of the embedded P in (6), and the corresponding position in all such cases, is within the structural configuration associated with the lexical entry of the verb. It is properly an internal argument, lexically. This is not true of the subject argument of verbs like *make*, *bake*, etc., in (2). There are no lexical structures comparable to (6) in which the subject of *make*, *bake*, etc., occupies a lexically internal position comparable to that occupied by the specifier *the books* in (6).²¹ This follows from the fact that the subjects of the verbs in (2) are external arguments.

We take it to be an inherent and fundamental property of canonical prepositions that they project a structure containing both a complement and a specifier. Prepositions are prototypically “birelational”; they specify a relation (spatial, temporal, or other) between two entities (or two events, circumstances, etc.). And the syntax of argument structure—permitting both complements and specifiers—defines an entirely local structure corresponding to the birelational character of prepositions. It is at least intuitively appealing to think of the structure of a prepositional projection as involving a kind of predication. According to this conception of the structure, the head (P) and its complement (a DP in the examples so far considered) combine to form a predicate. By definition, a predicate requires a “subject”, which is supplied by the specifier. Thus, the appearance of a specifier, as well as the appearance of a complement, is an

²¹This is a claim, of course, and it could be false. The force of the claim will become more evident as the discussion proceeds. For now we note that obvious apparent counterexamples, like the causative construction exemplified by *make John bake a cake*, are sentential syntactic constructions in which the object of the causative verb *make* is an extended projection of the verbal head, despite its traditional designation as a “bare infinitive”—cf., the passive, in which the *to* of the infinitive surfaces, and the negative, as in *make John not bake a cake*, *not raise cane*, *not whistle a tune*. Thus while the causative verb *make* is a lexical entry (lp-monadic), the causative construction is not. The internal composition of the clausal complement of causal *make* is entirely free. It is not “listed” in the lexicon. Moreover it is an extended projection, not a bare V-projection, and therefore includes functional categories, however reduced or impoverished.

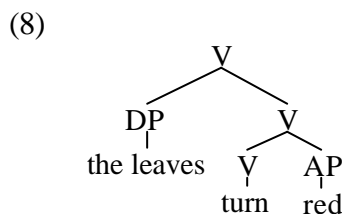
inescapable consequence of the nature of the head. Given that it is the head which fully determines the dyadic structure in these cases, we will refer to them as “basic (lp-)dyadic”.

There is another argument structure type whose character compels us to attribute to it an internal specifier argument. It differs from the type represented by (6) in certain respects, however. Consider the following sentence pairs.

- (7)(a) The leaves turned red.
 The cold turned the leaves red.
- (b) The coconut split open.
 The blow split the coconut open.
- (c) The liquid froze solid.
 We froze the liquid solid.
- (d) The safe blew open.
 The charge blew the safe open.

Like the prepositions exemplified in (4), the verbal heads in the sentences of (7) take both a complement (an adjective in these cases, *red*, *open*, *solid*) and a specifier (a DP, *the leaves*, *the coconut*, etc.). We can see that the specifier is, in our sense, internal to the lexical projection, because it appears as the sentential syntactic object in the transitive alternant (the second of each pair). The transitive, we claim, is formed by embedding the intransitive lexical structure (lp-dyadic) in the complement position of the lp-monic structure.

The intransitive verbal projections of (7) have the following form:



As in the prepositional constructions, the head (V) forms with its complement (AP) a substructure which demands a specifier (in the manner of a predicate requiring a subject). Here, however, it is the complement, not the verbal head itself, which has the fundamental property of requiring the projection of a specifier. It is an essential characteristic of adjectives (in languages that have them as a distinguished category) that they must be attributed of something, regardless of the structure in which they appear. In verbal constructions like (8), this property is satisfied by the specifier (i.e., a “subject” of sorts)—the verbal head serves to supply a structure in which an appropriately positioned specifier can appear.

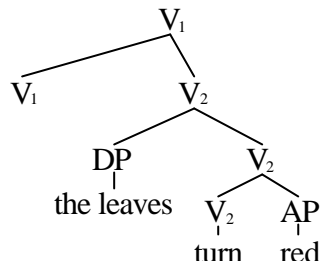
It is appropriate to view argument structures of the type represented by (8) as “composite”. They are, in fact, made up of two monadic structures, one being the type already discussed, i.e., a head which takes a complement, and the other being the structural configuration inherent to the category to which English adjectives belong, i.e., heads which do not take a complement but must appear in construction with a specifier. The combined structure satisfies the requirements of the two lexical nuclei—the adjective satisfies the complement requirement of the verb, and the latter supplies a place for the specifier required by the adjective. The adjectival phrase is, so to speak, parasitic on the verbal projection. But the reverse is true as well, for the verbal head projects a specifier position solely by virtue of its appearance in composition with a complement that itself requires an argument in a local specifier position.²²

For obvious reasons, we will refer to dyadic structures of the type represented by (8) as “composite (Ip-)dyadic” whenever it is necessary to distinguish the two dyadic types.

The intransitive members of the pairs in (7) are lexically based on composite dyadic configurations like (8). As actual sentences, of course, they appear in construction with specific functional projections required in sentential syntax—e.g., tense, complementizer. The same holds, of course, for phrasal arguments in syntax. The DP occupying specifier position in (8) is a nominal construction licensed in part by the determiner (D) projection which dominates it. But this is not enough to license a “fully projected argument phrase” in sentential syntax. It must at least satisfy the further requirement of Case. Accordingly, in English at least, it must raise out of the specifier position and into a position where nominative case can be assigned (e.g., the specifier position of an inflectional category, such as tense). Our concern here is lexical, however, and we are therefore concerned primarily with what we take to be the *basic* position of an argument, in this case the specifier of (8). While the DP occupying that position comes ultimately to function as subject in the sentential syntax of the intransitive sentences of (7), it functions as sentential syntactic object in the transitive members of (7). This is fully consistent with the claim that the argument shared by both transitive and intransitive alternants is a specifier internal to the lexical argument structure. We take the transitive alternant to have the following form:

²²The verb does not, in and of itself, motivate the appearance of a specifier. In fact, we suspect that this is quite generally true of verbs in English—i.e., verbs typically project the monadic structure including just a complement. It is not surprising, therefore, that *turn* does not project a specifier (capable of appearing as a sentential syntactic object) in all instances, and particularly when its lexical complement is nominal, as in *turn the corner* (cf., **turn the car the corner*).

(9)



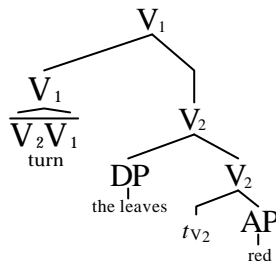
Here V_1 is a monadic nucleus taking V_2 as its complement. The latter is the dyadic structure just discussed. There is, of course, just one overt verb in the actual sentences of (7). This is also true in (9), of course. However, in (9) we are imputing to the transitive *turn*, and to other transitives of its type, an argument structure configuration which is essentially isomorphic to that of the location verb *put*, as in (6) above, the difference being that the upper head, V_1 , is an empty head in (9), unlike the overt *put* of (6). The parallel is important, however, since the transitive verb *turn* and the transitive location verb *put* come to share a fundamental structural property in sentential syntax. Specifically, the internal specifier DP is in a position in which it can, and must, receive case; it is governed and locally c-commanded by a verbal head.

In order to realize fully the parallel between *put the books on the shelf* and *turn the leaves red*, we must contrive to get the verb *turn* into the syntactic position it actually occupies in the transitive predicate. This brings us, in fact, to a topic which will figure prominently in our discussions henceforth, namely “conflation” or “incorporation”.²³

We have adopted here the hypothesis that the upper verbal head in (9) is empty. In fact, given our general proposal, this must be the case, since the configuration involved here is built upon the intransitive substructure headed by *turn*, the sole overt verbal head. The upper head, a member of the monadic class of heads, is not separately realized phonologically. Let us say—perhaps only informally, but nonetheless conveniently for our expository purposes—that the upper head, V_1 , has an empty phonological matrix. And let us assume further, as a general principle, that an empty phonological matrix must be eliminated from the morphosyntactic representation of sentences. This is accomplished, we assume, through conflation. Conflation is a specific kind of incorporation, conforming to an especially strict version of the Head Movement Constraint (Travis, 1984; Baker, 1988), according to which the phonological matrix of a complement replaces the empty matrix of the governing head. By “phonological matrix of a complement”, of course, we mean the “phonological matrix of the *head* of a complement”. Thus, the observed structure of (8), i.e., the “surface form of the verb”, that form presented to sentential syntax, so to speak, is as depicted in (10):

²³We borrow the term “conflation” from Talmy (1985), extending it here to a range of phenomena somewhat different from that covered by his use of the expression.

(10)



We will, in general, use the term “conflation” rather than “incorporation” in reference to the process involved here, in order to distinguish it from s-syntactic incorporation in the sense of Baker (1988), noting, of course, that the two notions are closely related and may ultimately prove to be the same thing. For present purposes, however, conflation is restricted to the process according to which the phonological matrix of the head of a complement *C* is introduced, via head movement and adjunction, into the empty phonological matrix of the head which selects and is accordingly sister to *C*. This is the circumstance represented in (10), where the matrix (corresponding to “turn”) is transferred from the lower head to the upper head—leaving, we suppose, a trace of as yet unknown character, perhaps simply a copy of V_2 .²⁴

Conflation, in the sense we have defined it here, is a major process in English morphology, accounting for an impressive range of forms available through so-called “zero derivation”, including denominal verbs (like *dance*, *laugh*, *box*, *saddle*, and the like) and de-adjectival verbs (like *clear*, *narrow*, *thin*, etc.). Conflation also accounts for certain derived words in which overt morphology appears (as in *red*, *widen*, *enliven*, and so forth). The topic of zero derivations and conflation will occupy much of the remainder of this chapter, but before embarking on that discussion, we would like first to review the elementary structural types which are defined by the fundamental relations in argument structure, i.e., the relations head-complement, and specifier-head. We take these to be maximally restrictive, in accordance with the informal definitions set out in (11):

(11) The fundamental relations of argument structure:

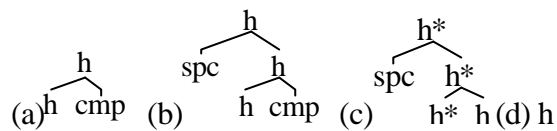
- (a) Head-Complement. If *X* is the *complement* of a head *H*, then *X* is the unique sister of *H* (*X* and *H* mutually c-command one another).
- (b) Specifier-Head. If *X* is the *specifier* of a head *H*, and if P_1 is the first (non-vacuous) projection of *H* (i.e., H'), then *X* is the unique sister of P_1 .

The relations defined in (11) straightforwardly permit certain lexical structures. A head which takes a complement but no specifier projects the structure which we have termed monadic, corresponding to (12a) below (in which “h” represents the head, and its categorial

²⁴We indicate here only the purely morphophonological effects of conflation. We assume that the syntactic effect is head-adjunction, inasmuch as conflation is a variant of Head Movement (though subject to the more restrictive constraint that it is limited in effect to incorporation from the complement position; cf., Travis, 1984).

projections, and “cmp” represents the complement; cf. (3) above). The definitions also permit a structural type consisting of the head alone, i.e., a head whose essential property is that it takes no complement and projects no specifier, corresponding to (12d) below, the “atomic” and simplest type. And the definitions also permit a basic dyadic type in which the head projects a structure embodying both the head-complement relation and the specifier-head relation, as in (12b), in which “spc” represents the specifier. The logic of the definitions also permits there to be a type of head which requires a specifier but not a complement. This can be accomplished only by composition. The head that has this property must itself appear as the complement of another head, “h*”, as in (c), in which “h” can be seen as endowing “h*” with the ability to project a specifier.²⁵

(12)



The structural configurations set out in (12) are neutral with respect to the morphosyntactic category (i.e., V, N, etc.) of the head. We think that it is right to keep these things separate. While there is, in English, a favored categorial realization of these heads, it does not hold cross-linguistically, and it does not hold universally in any one language, including English. In English, the predominant realizations are as follows: (a) V; (b) P; (c) A; (d) N. However, while (a) and (d) are relatively stable in category, (b) and (c) are less so, being realized often as V. In some languages of course, the category A is not distinguished—in Navajo, for example, the (c)-type configuration is headed by V universally; and in Warlpiri, of Central Australia, it is realized as N. The category V is a popular categorial realization of the (b) type; and in some languages, N realizes this type. In Navajo, the (b) type is headed by members of the postpositional category which has noun-like characteristics in that language; postpositions inflect like nouns, and a few postpositional stems also belong to the nominal category (e.g., -*káá*~ 'behind, following; trail, tracks'). We are aware that there is regularity here, and that there are generalizations to be made. Nevertheless, we will assume that morphosyntactic category and structural type are independent variables in lexical grammar.

2. Synthetic verbs.

An unusually large number of English verbs are identical in phonological form to a corresponding noun, e.g., *dance*, *laugh*, *cry*, *cough*, *sneeze*, and many others. Verbs of this sort are quite generally held to be “denominal”—they are “verbs derived from nouns”. English also has a large number of verbs which appear to be based on adjectives, among them *clear*, *narrow*, *thin*, *widen*, *darken*, etc. These are sometimes labeled “de-adjectival” and are thought to be “derived from adjectives”. We follow the tradition according to which verbs of both types are “derived”, and we assume that their lexical argument structure is in accordance with the

²⁵The head designated h in (c) may represent a simple head, without further projection, or it may represent a full phrase, since this is complement, and thus occupies an argument position within the larger structure headed by h*.

constraints implied in (11) above and, therefore, that they originate as one or another of the structures of (12). Briefly, the structures involved have a noun or adjective standing in the complement relation to a verbal head, as suggested below. The sense in which the denominal and de-adjectival verbs are "derived" consists in the circumstance that the complement conflates with the verbal head, producing a "synthetic" verb, a single verb word, like *dance*, as opposed to an "analytic" expression of the type represented by *make trouble*.

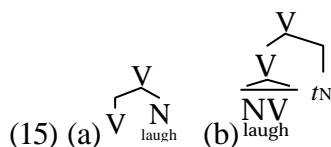
We will discuss these two types of synthetic verbs beginning with denominals belonging to the class represented by (13):

- (13) belch, burp, cough, crawl, cry, dance, gallup, gleam, glitter, glow, hop, jump, laugh, leap, limp, nap, run, scream, shout, sleep, skip, sneeze, sob, somersault, sparkle, speak, stagger, sweat, talk, trot, twinkle, walk, yell.

These verbs share an important lexical and syntactic property with analytic verbal expressions like *make trouble* and *raise Cain*—they do not enter into the transitivity alternation which characterizes verbs like *turn*, *split*, etc., exemplified in (7) above, thus:

- (14) (a) The cowboys made trouble.
 *The beer made the cowboys trouble.
 (i.e., the cowboys made trouble because of the beer)
- (b) The children laughed.
 *The clown laughed the children.
 (i.e., the children laughed because of the clown)

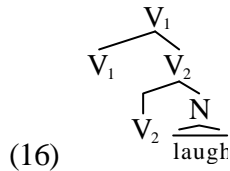
We account for this shared property, as well as the denominal character of the verbs of (13), by assigning them the monadic structure (15a), representing the fundamental lexical properties of *laugh*, and (15b) the actual conflated structure, with the complement (N) adjoined to the governing verb (V), with trace as usual.



The impossibility of *laugh the child*, *cough the colt*, *cry the baby*, *sleep the dog*, in the sense of *make the child laugh*, *make the colt cough*, and so on, follows from the fact that the lexical head of each of these verbs, and of the of (13) generally, belongs to the monadic type (12a), exemplified by (15). This configuration lacks a specifier and, therefore, cannot transitivize in the *simple* manner.

Simple transitivization of a verb involves its insertion into the complement position of a matrix verb, e.g., a verb of type (12a). This is a "free" option within the present conception of

argument structure; in fact, this cannot be avoided. Suppose, then, that (15) is embedded as a complement in another verb of type (12a), giving the following:



Whether a verb of this structure actually exists or not, or whether it *could* exist, is a legitimate question. But putting this question aside, it is clear that (16) cannot give rise to the transitive verb of **the clown laughed the children*. And this is a good thing, of course, since such a verb is impossible. This follows straightforwardly from the fact that the verbal head of the lexical structure of *laugh* projects no specifier, not does its complement (the noun *laugh*) belong to the type of elements whose members force the appearance of a specifier in the projection of the host verb. Hence, there is no place in the lexical structure for the surface object *the children* in the hypothetical transitive clause **the clown laughed the children*. These observations apply generally to the verbs of (13) and to the class of verbs known as “unergatives”. By contrast, insertion of the composite dyadic ((c)-type) configuration (8) into a monadic ((a)-type) structure, giving (9), gives an acceptable transitive structure. The specifier of the dyadic complement *the leaves turn green* functions as object in the derived verbal construction. This is simple, and successful transitivity, a free option in this framework.

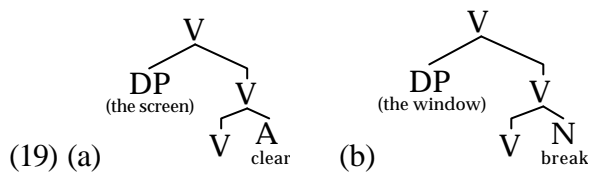
Now consider the verbs of (17) below:

- (17) bend, blacken, break, clear, crack, darken, dry, flatten, freeze, harden, loosen, melt, narrow, open, redden, soften, split, straighten, thicken, thin, tighten, widen.

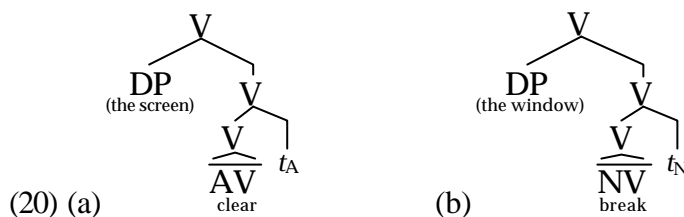
This is a heterogeneous set, containing verbs which are evidently derived from adjectives (e.g., *clear*) and verbs which appear to be derived from nouns (e.g., *break*). But they share the property that they freely enter into the standard transitivity alternation, as exemplified in (18):

- (18) (a) The screen cleared.
 (a') She cleared the screen.
 (b) The window broke.
 (b') He broke the window.

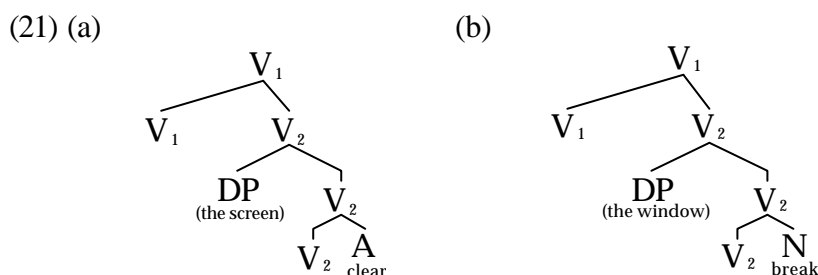
On the basis of this, we suggest that the intransitive variants of the verbs of (17) are synthetic counterparts of the analytic (12c)-type expressions exemplified in (7) above, i.e., *turn red*, etc. Accordingly, the verbs of (18) have the lexical argument structures shown in (19):



Strictly speaking, of course, these diagrams merely display the lexical *properties* that the heads possess—i.e., (i) that the V takes a complement and (ii) that the complement (A, N) requires a specifier. In actuality, the complement is conflated with the verb, yielding the synthetic verb word, *clear* or *break*.²⁶ Tentatively, at least, we assume that conflation, like head movement in general, adjoins the head of the complement (A or N) to the verb (V) which selects it, leaving a trace, as indicated informally in (20):



These represent the intransitive verbs *clear* (as in the screen cleared) and *break* (as in the window broke). When these verbs enter into their extended projections in sentential syntax, the lexical specifier (*the screen*, *the window*) raises to an appropriate functional specifier (e.g., Spec of Infl or Tense) for reasons of Case and the EPP. But transitivity is freely possible as a lexical option, and in this case, it is successful, since the specifier inherent to these verbs presents itself automatically as an s-structure object of the derived transitive verb. That is to say, when (19a) or (19b) is embedded as the complement of a verb having the (12a)-type structure, its specifier is locally governed by the matrix verb and, in the normal course of events will be assigned case by that verb. The basic properties of the derived transitive verbs are shown in (21):



²⁶We do not address the question of whether structures like (19), and ones given earlier, actually represent a stage in the derivation of a sentence. They do not do so if Conflate is a part of Merge (cf., Chomsky, 1995), a reasonable assumption; in this case the diagrams in (20) are the immediate product of Merge. As in earlier parts of this discussion, we will adopt the expository convenience of diagrams of the type represented by the (perhaps) fictitious (19), bearing in mind that they are representations of the lexical properties of heads and not necessarily structures present at a point in a derivation.

The actual structures, of course, are defined jointly by the properties of the elements involved and conflation, according to which the nominal or adjectival complement is conflated with V₂ and the latter is conflated with V₁, placing the derived transitive verb (*clear, break*) in the upper V-position where it locally governs and case-marks the specifier DP (*the screen, the window*) of the inner verbal projection. This is simple, automatic, transitivity; given without cost by the complement relation, which defines, among others, the argument structure configuration in which the (12c)-type projection occupies the complement position in the (12a)-type projection (as in (21)).

3. Navajo synthetic verbs.

Many verbs of Navajo participate in the transitivity alternation exemplified in (22) and (23):

- (22) (a) Tóshjeeh si-ts'il.
 barrel SPF:3-shatter:PERF
 'The barrel shattered, broke to pieces.'
 (Cf. Y&M 80.804: Tóshjeeh tó bii' hadeezbingo tsinaab²a²as bikáá' d²é²é' hadah 'í-mááz nít'ée' sits'il.)
- (b) Òeets'aa' sé-ṽ-ts'il.
 dish 3:SPF:1s-ṽ-shatter:PERF
 'I shattered the dish.'
 (Cf. Y&M 80.798: Shimá sání -eets'aa' bits'²á²á' sé-ts'ilgo 'ayóo bá hóoch²í²id.)
- (23) (a) Tin yí-y²í²í'.
 ice YPF:3-melt:PERF (< -gh²í²í')
 'The ice melted.'
 Cf. Y&M 80.794: Tin honib²a²ahgi nini'²á²á' nít'ée' yíy²í²í' lá.)
- (b) Yas yí-ṽ-h²í²í'. (< -gh²í²í')
 snow 3:YPF:1s-ṽ-melt:PERF
 'I melted the snow.'
 (Cf. Y&M 80.782: T-ṽ'óo'di didí-ṽ-jée'go yas yishh²í²ihgo baa naashá, tó hazl²í²í'go bee da'deesgis biniiyé.)

Other verbs which enter into this alternation include the following (from Young, Morgan, and Midgette, 1992; page numbers cited in brackets, see that source for details):

- (24) '-(ṽ-)'eeṽ 'float away' [177-83]; ii-(ṽ-)gááh 'whiten' [195]; (ṽ-)gan 'dry up' [199]; '-(ṽ-)geeh 'fall away' [as person, animal; 214,6]; ii-(ṽ-)kíísh 'become spotted, put spots on' [329]; ii-(ṽ-)k'is 'crack' [351]; (ṽ-)l²a²ah 'increase' [in number or quantity; 369]; '-(ṽ-)l²i 'flow away' [376,7]; d-(ṽ-)lid 'be burning' [371]; '-(ṽ-)máás 'roll

away' [397,8]; *ii-(¬-)-táás* 'bend over, double' [493]; *(¬-)-t'ees* 'cook, roast, etc.' [536]; *'-(¬-)-t'ééh* 'extend away' [line, fence; 546,7]; *ii-(¬-)-t-íísh* 'darken, turn brown, [571]; *(¬-)-t-íis* 'harden' [as mud, dough; 580]; *ii-(¬-)-tsóóh* 'yellow' [614]; *d-(¬-)-ts'²o²od* 'stretch' [643,4]; *d-(¬-)-zháásh* 'begin to wear away, down' [767]; *(¬-)-zh²o²oh* 'become gentle, make gentle' [796].

There are also verbs which do not alternate in this manner, lacking the simple derived transitive:

(25) (a) 'Awéé' d-ee-za'.
 baby d-SPF:3-belch:PERF
 'The baby burped.'

(b)*'Awéé' d-é-sa'. (< d-é-¬-za')
 baby d-SPF:1s-¬-belch
 'I burped the baby.'

Other verbs of this type include the following, among many others:

(26) *na-bé* 'swim, bathe' [69]; *-cha* 'cry' [70]; *d-lish* 'spurt urine' [as of dog; 375]; *na-né* 'play' [423] *hw-taa¬* 'sing' [490]; *d-zheeh* 'spit' [771]; *'-zhíí¬* 'gasp, inhale sharply' [773]; *d-yih* 'pant, puff' [702]; *'-yóó¬* 'inhale' [723].

We can explain the behavior of the alternating verbs of (22) through (24) on the assumption that the root element upon which each is based has the property which characterizes the root element in the (12c)-type lexical configuration—i.e., the property of requiring the appearance of a specifier appropriately positioned. This will provide the internal argument required for successful transitivity, i.e., the s-structure object. The transitive and intransitive verbs of (22) correspond approximately to the diagrams in (27a) and (27b), respectively:



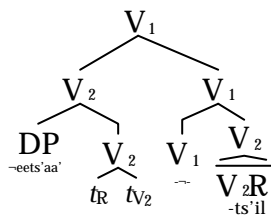
These are diagrams representing the lexical properties which determine the syntactic character of the verbs of (22a) and (22b), not their actual surface form, of course. It is not intended that these diagrams should represent the linear order of heads, complements, and specifiers, that being a matter of surface morphosyntactic form and irrelevant to the expression of basic structural relations defined by the lexical items; the head-final ordering used here reflects only coincidentally the head-final ordering which prevails in Navajo surface form. The properties which are relevant here are (i) R belongs to the class of elements which require a specifier, this requirement being satisfied by the host verb; (ii) the verb which selects and hosts R has the dual properties that it takes a complement (R itself) and it projects a specifier; (iii) V₁ of the transitive

structure (27b) has the property that it takes a complement (V_2) and projects no specifier. The root element *-ts'il* "shatter, fragment" is not attributed conclusively to a particular category; instead it is simply glossed R for "root". It may well be correct for Navajo that root elements used as the heads of verbs are simply "roots", indeterminate with respect to category (e.g., N, V, A, P). There is some reason to suspect, however, that many root elements do in fact belong to a basic category— *-ts'il*, for example, may in fact be nominal in origin, related to the element *-ts'iil* "ruin, shattered remains, fragments" (cf. Young and Morgan, 1987D:742). This is not actually relevant to our discussion, however. Whether or not a root belongs to a particular category, our concern is with its properties and with the structure within which it appears. The root element R in (27) has a certain property (that of requiring a specifier), and it is ultimately conflated with V to form an actual verb.

We can now say something about the \neg -Classifier. It appears regularly in the transitive alternant of the alternating verbs exemplified in (22-24). And in that use, within the conception of argument structure assumed here, we can say exactly what the \neg -Classifier is; it is a verb projecting the (12a)-type structure. It takes a complement, in this case a verb of the (12c)-type, and it projects no specifier. Its subject is therefore an external argument (i.e., a distinguished adjunct), as is generally the case for transitive verbs.

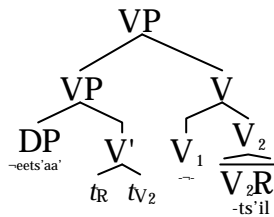
The derivations of both the intransitive and the transitive verbs of (22) (= (27)) involves conflation, of course, since the verbal heads must acquire their morphological substance. Conflation is in fact head movement, as we have assumed. In the case of (27a) and the inner verbal projection of (27b), R conflates with (adjoins) to V. And in the transitive construction, the inner verb (V_2) adjoins to the right of the upper verb (V_1). The latter is in fact the \neg -Classifier, phonologically a prefix to the raised verb stem (V_2):

(28)

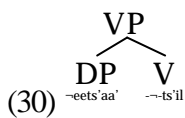


This corresponds to the fundamental structure of the verb phrase of (22b). This will combine with an external argument (subject) and with the inflectional categories (M and E) to form a clause in sentential syntax, giving an actual sentence of the type represented by (22b). We have departed here from the practice of earlier parts of this work in the manner in which the projection of a head is represented notationally, using V at all projection levels, for example, instead of V, V', and VP. There is no greater merit attached one as opposed to the other of these notations, and the diagram in (28) could well have been as in (29), in which adjunction structures are more explicitly represented:

(29)



Henceforth, we will return to this more perspicuous notation, and except where it is crucial to a point being made, we will omit the details and traces of conflation, reducing the more exact (29), for example, to the more readable (30):



Now let us turn to non-alternating verbs of the type illustrated in (31):

- (31) 'Awéé' yi-dloh.
 baby PROG:3-d:laugh:PROG
 'The baby is laughing.'

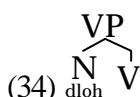
This verb, and the others of its kind, cannot transitive in the simple manner of (22-24). Thus, (32) is ill-formed:

- (32) *(Shí) awéé' yishdloh. (< gh-sh- \neg -dloh)
 *'I laugh the baby.' (I.e., 'I make the baby laugh.')

Instead, another construction must be used:

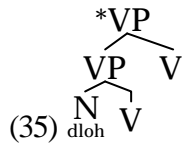
- (33) (Shí) awéé' biyeeshdloh. (< b-y-gh-sh- \neg -dloh)
 'I make the baby laugh.'

There are at least two reasons why simple transitive will not function to produce a successful output. One of these has already been given in relation to the English counterpart **laugh the child*. As shown in (16) above, free insertion of the (12a)-type structure of *laugh* (shown in (15)), fails as a transitive, because the inner verb projects no specifier and, as a result, the upper verb has no object in sentential syntax. The same thing holds for the Navajo verb. Its lexical structure is of the (12a)-type, as depicted in (34):



Since V here belongs to the class of elements which projects no specifier, simple transitive will fail. Insertion of (34) into the complement position of another verbal projection (say, of the

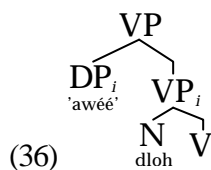
same (12a)-type), yields a structure which fails as a transitive, since the higher verb has no object. In fact, the structure is simply redundant and is altogether ill-formed:



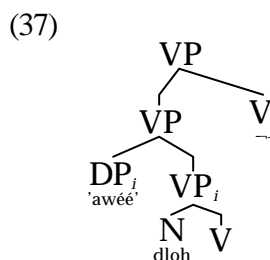
The second reason why simple transitivity fails with these "unergative" verbs is more complicated; it has to do in part with the issue of how the "causative" construction in (33) arises. And this, in turn, requires us to enter into a discussion of Case Theory (within the "Case-Binding" framework developed by Bittner, 1994; and see also Bittner and Hale, 1996a,b).

4. Case-binding and the Navajo causative construction.

We have claimed that verbs of the type represented by Navajo *-dloh*, and English *laugh*, do not project a specifier. But they do have subjects in sentential syntax, of course. Their subjects are external arguments and, by hypothesis, they are distinguished adjuncts of VP, as shown in (36):



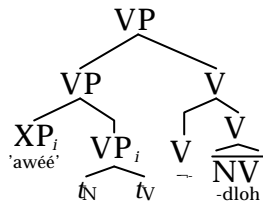
Suppose we insert this structure into the complement position of a (12a)-type verb, i.e., the verb which is realized as the \neg -Classifier, giving (37):



The situation represented by (37) is quite different from that of (35). Here, the upper verb does stand in the structural relation appropriate to a transitive construction, since it locally c-commands and governs an argument, the subject of the lower verb—that argument could, in principle, function as the s-structure object of the causative verb. Still, one cannot say (32); instead, one says (33). Why is this? To answer this question, we must look in greater detail at what transpires as the actual derivation develops.

First, let us look at the diagram which results after conflation (of N and the lower V, and then of the lower V and the higher V), as in (38):

(38)



The complex derived verb $-\neg$ -*dloh* now locally c-commands and governs the subject of the lower VP, i.e., XP_i ; there is no other head which governs that argument, and there is no barrier intervening between V and XP_i . In this circumstance, V is in a position to "Case-Bind" the subject, provided all of the following conditions are met:

(39) CASE-BINDING

A head H Case-Binds and argument A if:

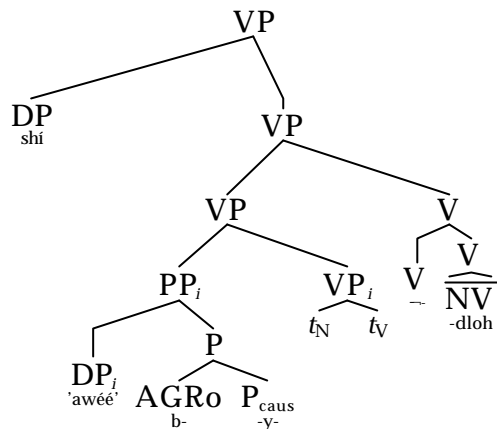
- (i) H governs and locally c-commands A ; and
- (ii) H governs a bare nominal c-argument of A ; and
- (iii) H delimits a "small clause".

The relevant argument (A) in (38) is XP_i , the subject of the inner VP. And the relevant head (H) is the derived verb $-\neg$ -*dloh*. The latter delimits a small clause by virtue of governing the inner VP, a small clause; so (iii) is satisfied. And (i) is also satisfied, as we have seen, since V locally c-commands XP_i and V is not separated from XP_i by any barrier. Now consider clause (ii) of (39). Is there any bare nominal element in the governing domain of V which qualifies as a co-argument of XP_i ? We maintain that there is, namely the N *dloh* which appears as the lexical complement of the lower verb. Although that N is conflated into the verb, it is nonetheless a co-argument of XP_i , since it is fundamentally the complement of the V of which XP_i is the subject—both XP_i and N are arguments of the lower verb. And N is governed by the derived V $-\neg$ -*dloh*, since that verb governs the trace t_N , as well as the conflated N itself.

All of the conditions for Case Binding are satisfied. Therefore, the derived V must Case Bind XP_i . This is not an option; it is obligatory. It is for this reason that simple transitivity, which would yield the hypothetical transitive verb of (32), does not in fact yield that form. Instead we get (33).

Navajo, like many other languages which exhibit an ergative pattern of agreement and case, have the property that and oblique case is employed when an argument is Case-Bound by a verb. And in Navajo, one of the favored expressions of oblique case is by means of a postposition. This is evidently what happens in the causative construction exemplified by (38). Thus, the argument designated XP_i in that structure is not a DP, but a PP. And it is within the PP that the agreement relation is established (in addition, we add here the external argument (subject) of the upper verb):

(40)



DP_i *awéé'* stands in the correct position to enter into the agreement relation with P_{caus}, the closest c-governing head and an agreement-bearing head; DP_i does not need to raise to a position locally c-governed by E, since it finds its agreement partner within PP_i. In the full sentential syntactic representation of (33), the VP depicted in (40) will appear as a complement of M, and the latter will appear as the complement of E. Head Movement will raise the derived verb and adjoin it to M, and the complex M thus derived will raise and adjoin to E. Normally, when the PP complement of a verb is phonologically dependent, i.e., a proclitic, it merely attaches to the fully derived verb to its right, binding with it rather loosely, like any other disjunct proclitic element. The causative P, realizing the oblique case of the Case-Bound argument *awéé'* in (40), exhibits a different behavior morphologically. It actually incorporates into E, appearing to the right of the first overt E, if there is one. This can be seen in (41b), the causative counterpart of the unergative (simple (12a)-type verb) in (41a):

(41) (a) 'Awéé' d-ee-za'.
baby d-SPF:3-belch:PERF
'The baby burped.'

(b) 'Awéé' bi-di-y-é-sa'. (< b-d-y-s- 'sh-↗za')
baby 3-d-y-SPF:1s-↗belch:PERF
'I burped the baby.'
(Cf. Y&M 80.184: 'Awéé' binághahd²é²' náníshkadgo bidiyésa'.)

In the process of incorporation, the agreement morphology (*b-* in (41b)) is left in initial position, preceding the overt inceptive E, *d-*. Agreement would appear to be assuming the standard pre-E object agreement (AGRo) position when the causative P incorporates, but this is probably true, the situation is not as simple as it might seem., since the disjunct iterative prefix *ná-* may follow the agreement morphology introduced by the causative *y-*, and the overt indefinite object agreement prefix '↗', if present, generally follows the causative agreement:

(42) (a) Biná'iiss²í²h. (< b-ná#'-y-Ø-sh-↗y²í²h)

'I iteratively feed him.' (Lit., make him eat something, as baby.)'
(Y&M87D:215)

(b) Dibé yázhí tózis bee bi'iyíí-t'óód. (< b-'-y-gh-'-sh-ṛ-t'óód)
'I fed the lamb with a bottle.' (Lit., made it suck something.)
(Y&M87D:215)

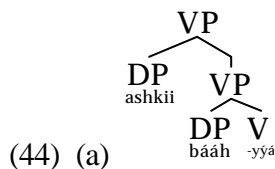
From this we could conclude that it is only the causative P which incorporates into E, leaving the associated agreement morphology behind in the standard disjunct position associated with PPs in Navajo. But there are two reasons why this might be the wrong conclusion. First, the causative agreement morphology can also follow the iterative or reversative *ná-*, as in (43a), and it regularly does so if '-' is not also present, as in (43b):²⁷

(43) (a) Dibé yázhí nábi'iishdl²ihgo a-níná'át'ááh. (< ná#b-'-y-ii-Ø-sh-ṛ-dl²ih)
'I feed the lambs every morning.' (cf., Y&M87D:215)

(b) Nichidí ná nábiiss²i'. (< ná#b-y-ii-Ø-sh-ṛ-z²i')
'I righted your (overturned) car for you.' (Y&M87D:267)

Secondly, the only object prefix which can cooccur with that introduced by the causative is '-', the indefinite object prefix. This is rather mysterious. Why is that case that no referential object (of first, second, third, or fourth person) can be represented by object morphology in E when causative agreement is also present, the latter being associated with the causative morphology originating as the postposition representing the oblique case assigned to the case-bound subject governed by the derived transitive verb. In effect, causative object agreement and ordinary object agreement are mutually exclusive, with the minor exception that the indefinite '-' can indeed cooccur with causative agreement. Let us set this exception aside, in the expectation that it is some special property of the indefinite object which accounts for this and that it is not a true exception to the mutual incompatibility noted. How, then, is the latter to be accounted for?

To answer this question, we must determine what would happen if an ordinary transitive verb were embedded as the complement of an (12a)-type configuration. Suppose we take the VP structure (44a) underlying sentence (44b):

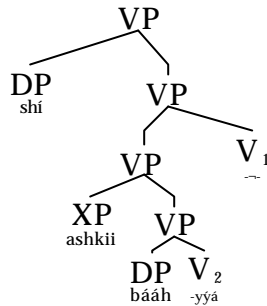


²⁷There is some fluctuation. While the causative agreement always precedes the indefinite object prefix '-', it sometimes follows the iterative *ná-*; thus, both of the following are recorded for "make him drink something (iterative)": *biná'iishdl²ih*, *nábi'iishdl²ih* (Cf., Y&M87D:215) This variability has to do with properties of *ná-* itself, and will be taken up in another part of this essay dealing with the inchoative.

- (b) Ashkii bááh yiy²á.
 'The boy is eating bread.'

If (44a) is inserted as the complement of the (12a)-type verb [_V -ṽ-], with its own external argument *shí* T, we obtain the derived structure (45):

(45)



The upper verb—[_V -ṽ-] (V_1), let us call this the "causative verb," after the construction which it heads—stand in exactly the right position to Case-bind the subject of the inner VP, i.e., *ashkii* 'boy'. The causative verb governs and locally c-commands XP *ashkii*, there being no head closer to XP which c-commands it. Furthermore V_1 governs a bare DP (*bááh* 'bread') which is a co-argument of XP *ashkii*. And finally, V_1 delimits a small clause, since it is the lexical head of the upper VP. Thus, the three conditions for Case-binding, repeated below for convenience, are satisfied in (45), assuming XP to be A and V_1 to be H:

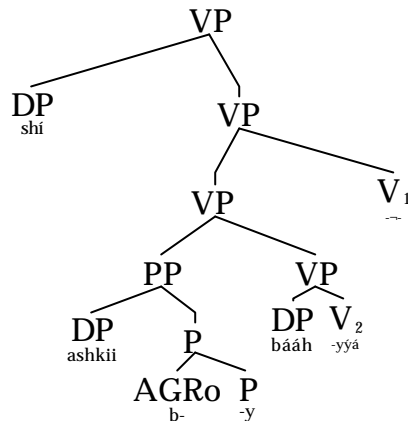
(46) CASE-BINDING:

A head *H* Case-Binds and argument *A* if:

- (i) *H* governs and locally c-commands *A*; and
- (ii) *H* governs a bare nominal c-argument of *A*; and
- (iii) *H* delimits a "small clause".

According to the suggested pattern of Case realization in Navajo, an argument Case-bound by a verb appears in an oblique case, i.e., a PP, and specifically that PP headed by the postposition associated with the construction at issue, i.e., the causative postposition *-y*. Thus, XP of (45) is in reality the oblique case expression realized as a postpositional phrase in Navajo:

(47)

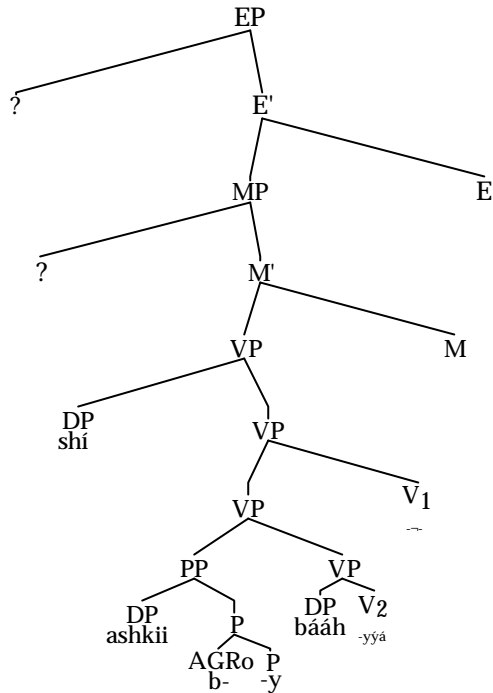


In its essential make-up, (47) is the same (40), in terms of what is relevant for Case-binding. There is one difference, however, in (40), the complement of the lower verb is a bare nominal root (N, *dloh* 'laughter') which conflates with the verb and is entirely non-referential. On the other hand, the complement of the inner verb in (47) is a DP (*bááh* 'bread'), which occupies a standard argument position and is capable of being referential and of entering into coreference relations with fully referential DPs. This difference will play a role in the derivational destiny of (47), by comparison with that already sketched for (40), the verbal projection underlying the causative constructon (33).

The question we are faced with is this. Given that (47) is a well formed structure, by hypothesis, does it correspond to a well-formed verbal construction in sentential syntax? If not, why not?

We need to see what transpires in the rest of the derivation, i.e., in the extended projection of (47), cited here without the effects of Head Movement, for expository convenience:

(48)



In reality, of course, V_2 will raise and adjoin to V_1 ; and V_1 (now hosting V_2) will raise to M , and M will raise to E . We have left the agreement morphology out of M and E . It is the agreement morphology which is going to be crucial here, we believe. Ordinarily, M will bear the agreement morphology construed with the subject of the causative verb V_1 —this is the DP *shí* 'I', in this instance, and agreement is surely successful here. By hypothesis, the subject of V_2 is Case-bound by V_1 and therefore appears in the oblique case realized by the causative postposition *-y*. Since the latter is an agreement bearing head, the agreement needs of the DP *ashkii* 'boy' are met locally, internal to the PP. But there is still a DP argument which must enter into an agreement relation—namely, *bááh* 'bread'. The specifier position projected by M is available, and if both VP nodes dominating the DP *bááh* are transparent (a reasonable assumption, given Head Movement), that argument can presumably raise to Spec MP in order to enter into the agreement relation with AGRo in E . Putting all of this together, assuming in addition the process of "intrusion" which introduces the causative postposition and its agreement morphology (glossed AGRc here for expository purposes) into the E-complex, we obtain (49a):

(49) (a) **Shí ashkii bááh biiss²á.* (< $b_{\text{AGRc}} - \emptyset_{\text{AGRo}} - y - \emptyset_{\text{M}} - sh - \neg - y^2\acute{a}$)
'I make the boy eat bread.'

(b) **Hastiin ashkii bááh yiyis²á.* (< $y_{\text{AGRc}} - y_{\text{AGRo}} - y - \emptyset_{\text{M}} - \emptyset_{\text{AGRs}} - \neg - y^2\acute{a}$)
'The man makes the boy eat bread.'

We include (49b), in which all of the arguments are in the third person and in which both object morphologies would therefore be expected to be overt, as indicated. But neither (49a) nor

(49b) is well formed. This is somewhat mysterious in view of the fact that (50a) and (50b), with the indefinite object morphology, are perfectly grammatical, as noted earlier:

(50) (a) *Shí ashkii bi'iiss²á.* (< b-'-y-Ø-sh- \neg -y²á)
 'I am feeding the boy (lit., making make the boy eat).'

(b) *Hastiin ashkii yi'iis²á.* (< y-'-y-Ø-Ø- \neg -y²á)
 'The man is feeding the boy (i.e., making the boy eat).'

The problem appears to relate to the fact that in hypothetical sentences of the type represented by (49), both the "causee" (i.e., *ashkii* 'boy' in our example) and the "direct object" (*bááh* 'bread') are fully "referential" arguments, in the sense that they belong to a category of DP which can either introduce a referent in discourse or pick up a previously established referent. This is the canonical DP argument type, and it is the type which must enter into an agreement relation (and a Case relation, though this has not been fully discussed as yet). It is a general fact of Navajo that the "causee" and the "direct object" (both referential in the sense just defined) cannot both enter into the agreement relation. The construction simply fails to yield a well-formed result. We suggest that the reason for this has to do with the fact that the causative P intrudes into the upper and left-most structure of verb word (i.e., that portion projected by E) and the AGR_c agreement morphology associated with the causative usurps the function of AGR_o, the agreement morphology normally associated with E. In effect, only one agreement morpheme of the relevant sort can appear in E. Thus, for essentially morphological reasons, the hypothetical causative construction exemplified in (49) cannot exist. If one of the agreement morphemes is omitted from (49), the construction remains ill-formed:

(51) (a) **Shí ashkii bááh biiss²á.* (< b_{AGR_c}-y-Ø_M-sh- \neg -y²á)
 'I am making the boy eat bread.'

(b) **Hastiin ashkii bááh yiyis²á.* (< y_{AGR_c}-y-Ø_M-Ø_{AGR_s}- \neg -y²á)
 'The man is making the boy eat bread.'

This, we assume, is due to the general requirement that canonical DP arguments must enter into the agreement relation. The agreement relation is biunique; only one DP may be construed with a given AGR, and vice versa.

The causative construction exemplified in (50) involves the so-called indefinite object morphology '-', extensively discussed in Young and Morgan, (1987G:67-69) and in a recent study by Young (1996). This is not agreement morphology as normally understood, since it is never construed with an overt. It has all the syntactic and semantic characteristics of an incorporated element (essentially like putative nominal component in the hypothetically conflated [V N] constructions underlying non-alternating verbs like Navajo *-dloh* and its English counterpart *laugh*. Unlike standard DP object arguments, the indefinite is utterly non-referential. Thus, a verb containing the indefinite object morphology is the equivalent of a verb that had no object at all, i.e., an intransitive—and Navajo-speaking language scholars regularly refer to

them in this way. Accordingly, the verb of (52b) is in no way a variant of (52a), a typical transitive:

(52) (a) Shizhé' é t'áadoo le' é nayiisnii'. (< na#y-h-s-ᵐ-nii')
 'My father bought something.'

(b) Shizhé' é na'iisnii'. (< na#-h-s-ᵐ-nii')
 'My father shopped, made purchases.'

We propose that indefinite object morphology should in fact be analyzed as an incorporated element, originating as an object argument, raised to Spec of MP and, from that position, incorporated into E, via Head Movement. The details of this proposal remain to be developed, but the effects which must be achieved are two: (i) indefinite object morphology ' does not "compete" with AGRc for the standard object agreement position in E, and (ii) indefinite object morphology essentially removes a referential DP object from the argument roster of the verb, rendering the latter functionally intransitive.

There is incidental support for this conception of the indefinite object morphology. The syntactically inert nominal component of many Navajo non-alternating ("unergative") verb themes is represented by the indefinite ' (this is the "thematic" use of 3i in Young and Morgan, 1987G:68, and elsewhere; and Young, 1996):

(53) ' -ᵐ-wosh 'sleep'
 ' -ᵐ-gh²á²á' 'snore'
 ' -l-zhish 'dance'
 ' -Ø-lizh 'urinate'
 ' -Ø-ch²i' 'defecate'
 ' -ᵐ-sooᵐ 'arrive (in a swarm)'
 ' -ᵐ-k²ó²óh 'swim'

Similar incidental support comes from verb themes in which the indefinite object stands for some constant or generally understood entity, mass, or concept, i.e., the "prototypical patient" of the event denoted by the verb:

(54) ' -Ø-y²á 'eat, dine (lit., eat 3i)'
 ' -ᵐ-chí 'give birth (lit., bear 3i)'
 ' -Ø-tsid 'do silversmithing (lit., pound 3i)'
 ' -ᵐ-k²a²ah 'make puberty cake (lit., to sweeten 3i)'
 ' -ᵐ-leeh 'stage event' (lit., cause 3i to be realized)'
 ' -Ø-tl'ó 'weave, do weaving (lit., weave 3i).'
 na#-n-ᵐ-kaad 'herd sheep (lit., move spreading 3i about)'
 na#-n-Ø-tin 'teach (lit., teach 3i)'
 ná#-ᵐ-'ah 'butcher (lit., butcher 3i).'

5. Conclusion.

The \neg -Classifier of Navajo plays an active role in the lexicon and syntax of the language, having a predictable function in the transitivization of the "alternating" verbs based on (12c)-type verbal projections. Our suggestion in those cases is that the \neg -Classifier is to be identified with a "transitivizing" verb, itself of (12a)-type, which takes the (12c)-type verbs as its complement. This is what we have called "simple" transitivization. The interpretation of the resulting transitive verb is typically one involving "causation", the external argument of the upper verb being the "agent", the specifier of the inner verb being the "patient". These "meanings" are not inherent to the elements involved, however. The transitivizing V (- \neg -) is simply an otherwise empty verb of type (12a), its subject simply an external argument; likewise the specifier of the internal verbal projection is simply that, the DP in specifier position. The interpretations involving such notions as "cause", "agent", "patient", and the like, are functions of the *structures* involved and of the lexical (encyclopaedic) meanings of the semantically contentful vocabulary items which appear in their appropriate positions in actual well-formed sentences of Navajo.

In addition to its use in simple transitivization, the verb identified with the \neg -Classifier is used in the Navajo causative construction. This, we contend, involves the embedding of a non-alternating verb, with its external argument, as the complement of [ν \neg -], with specific morphosyntactic consequences following from Case Theory (specifically, the Case-binding theory of Bittner, 1994). Here again, the appearance of the \neg -Classifier is entirely productive (albeit limited by independent factors).

Not all occurrences of the \neg -Classifier can be related to transitivization. Like the productively *detransitivizing* d-Classifier, the \neg -Classifier has become a mere "lexical component" in many contemporary verb themes, having no synchronic function in relation to voice. The functions discussed in the body of this discussion, however, are part of the live and productive grammar of Navajo.

As a final remark, we will relate the lexical categories noted here to the justly renowned issue of "unaccusativity" (Perlmutter, 1978; Levin and Rappaport, 1994). From a strictly structural point of view, the Navajo verbs of the type represented in (24) above belong to the type (i.e., (12c)) which we associate with the term "unaccusative"; their syntactically active DP argument is an internal argument, a specifier, as evidenced by the ability of these verbs to undergo simple transitivization. On the other hand, verbs of the type represented by (26), and by other (12a)-type verbs in the text, belong to the canonical "unergative" category; they project no specifier and, accordingly, cannot undergo simple transitivization—instead, they can only enter into the morphologically more complex causative construction. We contend that these "unergatives" are fundamentally transitive (at the most abstract level of representation) and that the fact that they do not project a specifier, lexically, is part and parcel of their fundamental transitivity. Transitives likewise do not project a specifier in their lexical argument structure representations.

These remarks in relation to unaccusativity are to be understood in the context of a particular theory of argument structure, one which takes the position that argument structure is a syntactic matter (as indicated in the introductory sections). Pam Munro has pointed out,

correctly, that the Navajo verb system represents, from the semantic perspective, a system more closely akin to the "active" agreement grammars of languages like Winnebago and Choctaw. This is an aspect of Navajo which will be investigated in the context of a study of the Navajo "inchoative" construction (Cf., Young and Morgan, 1987G:187-188).