A Unification of Indo-European Aktionsart and Navajo Verb Theme Categories

Sumayya Racy
University of Arizona

Abstract

In this paper,[1] I explore verb theme categories in Navajo in general, and their relation to Indo-European Aktionsart in particular. Midgette (1995) argues that we should not consider Navajo verb theme categories to be the same sort of property as Indo-European Aktionsart, both because there are more verb theme categories than there are Aktionsarts, and because Aktionsart is part of the lexical semantics of a verb, while verb theme categories are derived through morphological processes. I suggest, however, that we may in fact view these as related phenomena. In making the case for a unified treatment of Navajo verb themes and Indo-European Aktionsart, I appeal to arguments from Distributed Morphology (Halle and Marantz, 1993), from non-lexical Aktionsart (Harley, 1999), and from varied approaches to word building (Marantz, 2001; Arad, 2003).

1   Introduction

In Midgette (1995), the author proposes an analysis of event structure in Navajo which differs from that of English. Specifically, she argues that Navajo should be treated distinctly from English because Navajo marks different Aktionsart-like distinctions than English (English and Navajo forms are semantically distinct), and because English Aktionsart is a property of whole

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[1] I would like to thank Amy Fountain, Mary Willie, and the other students of the Spring 2006 Navajo Morphology class for all their helpful comments on this paper. Any errors or omissions are purely my own.

verb words, while Navajo event structure is the result of affixation processes (English and Navajo forms are morphosyntactically distinct). Here I propose an account which unifies event structure analyses of Navajo and English. I argue that, contra Midgette, we may view English and Navajo as having the same kind of Aktionsart semantically, and further, that they are subject to the same syntactic principles.

2   Aktionsart in English

Whaley (1997, 282) defines Aktionsart as "an inherent or lexical aspect of verbs." The four main Aktionsarts for Indo-European languages like English are: Achievement, Accomplishment, Activity, and State.[2]

(1) | **Different Aktionsarts** | |
| --- | --- |
| **State** | A type of predicate that denotes properties or nondynamic circumstances—for example, *be sad*, *perceive*, and so on. |
| **Activity** | A type of predicate that indicates a dynamic event in which there is no change of state such as *sing* and *run*. |
| **Achievement** | A type of predicate that indicates a change of state or dynamic circumstances such as *die* or *learn*. |
| **Accomplishment** | type of predicate that is characterized by causative semantics—for example *bury* ("cause to be buried") and *kill* ("cause to die") |

(Whaley, 1997, p.281,291)

There are two key observations to make here. The first is that there are only four basic Aktionsarts: *State, Activity, Achievement*, and *Accomplishment.* It is certainly possible to make further distinctions within these groups; for example, both *sing* and *run* are activities, though running involves movement through space and singing does not. But, at the most basic level, there

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[2]What Whaley presents are Aktionsart categories based on Indo-European languages (as well as others, perhaps). Throughout this paper, I use English as the representative language for these distinctions.

are only these four categories. The second observation that is key is that Aktionsart is viewed as an inherent lexical property of verbs—it is always part of the verb and cannot be derived. Though Whaley's analysis is intended solely to account for Indo-European languages, I argue below that this account may be extended to Navajo.

3 Verb Themes in Navajo

Midgette (1995) presents a view of Navajo in which verbs are built up in four levels. The most basic level is the root. At the next level, the classifier (which gives transitivity) and the thematic prefix (which contributes to an Aktionsart—like property) are added. Then, at the third level, derivational prefixes and aspect markers are added. This third level is the closest to the Indo-European conception of a bare verb, according to Midgette. Finally, there is the fourth level, in which we obtain a full, complete form through the addition of final mode prefixes and subject and object prefixes. This is illustrated in table 1 on page 85.

As discussed in the introduction to this volume, Navajo "verb words" are much more complex and carry much more meaning than English verb words. Here, when I wish to refer to the kernal of verbal meaning, I will refer to the *root*. A *full verb* word is a form which has all affixes necessary to render it complete to a speaker of Navajo (Level IV). The closest equivalents of Indo-European Aktionsart categories are the "verb theme categories" (Applied at Level II). These are "...superordinate classifications of verb themes, which form several distinct groups" (Midgette, 1995, p.43). Some examples are given in (2).

(2) Some verb theme variations on the root *baal*
    a. náshba̱ł
    b. nááshba̱ł
    c. yiiba̱ł

(Midgette, 1995, p.42)

The verb-theme categories are given below:

Level I: *The Root*
most basic level

$\sqrt{kaad}$
'flat', 'spreading'

Level II: *The Verb Theme*
thematic prefixe(s) + classifier + root

niłkaad
Theme 2 + classifier + root
'herd it'

Level III: *The Verb Base: individual verb*
verb theme + derivational prefix + aspect stem (+ some mode prefixes?)

nanishkaad
derivational prefix + mode prefix + continuative aspect stem + theme prefix + classifier + root
'herd plural object about'

Level IV: *The Verb Form: fully inflected*
verb base + mode stem + (some) mode prefixes + object/subject pronouns

neineeskaad
Pf-mode + 3sgSubj + derivational prefix + mode prefix + continuative aspect stem + theme prefix + classifier + root
'he herded them around'

(Midgette, 1995, p.38)

Table 1: *Navajo Verb Construction*

(3) **Verb Theme Categories**

Neuter:	stative	*be tall*
Durative:	successive—action performed repeatedly	
	operative—action peformed on many	*chop*
	things	
Momentaneous:	motion	*arrive*
Conclusive:	conversive—action which is a complete	*urinate*
	process	

(Midgette, 1995, p.44)

Two crucial observations are in order here. First, we again observe four basic categories, just as English has four basic categories (though Midgette elaborates on these categories further, as discussed below). Second, these verb theme categories are the result of an affixation process and are not purely inherently part of the stem (for example, the same root might occur with different thematic prefixes, yielding a different verb theme category).
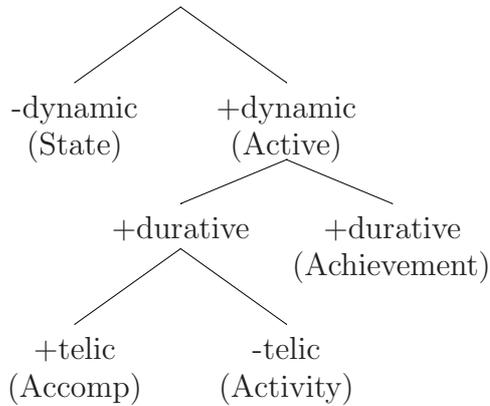
4 Aktionsart versus Verb Themes

It may be observed that there are certain semantic similarities between the English (Indo-European) Aktionsart categories and the Navajo verb theme categories. Both the Indo-European Stative and the Navajo Neuter concern states. Both the Indo-European Activity and the Navajo Durative involve ongoing actions. The Indo-European Achievement and Accomplishment involve activities with some sort of endpoint, as do the Navajo Momentaneous and Conclusive. There is not a perfect one-to-one match between these. For example, the Indo-European Achievement indicates a dynamic event or a change of state, and Accomplishment has a causative semantics. Navajo Momentaneous seems to have a certain 'motion' meaning, not necessarily encoded in Indo-European Aktionsart. Still the striking similarities prompt us to explore these categories further.

4.1 The Syntactic Difference

Midgette (1995, p.35) says that she uses the term "verb theme category" rather than Aktionsart because of the fact that "...the basic 'verb' in Navajo is a derived form and not a pure lexical item." Recall that Indo-European
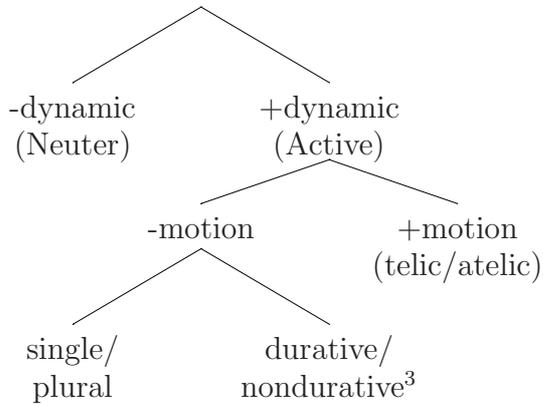
Aktionsart is considered to be part of the semantics of the verb itself, in an underived form. Aspect, on the other hand, describes the temporal structure of overall (sentential/propositional) events (Whaley, 1997, p.220). In English, aspectual differences are often expressed through auxiliaries, as in (4).

(4) a. He ate   *Perfective Aspect*
     b. He has eaten   *Anterior Aspect*
     c. He was eating *Imperfective Aspect*

<div align="right">(Whaley (1997, p.213) modified)</div>

In Navajo, on the other hand, verb theme categories are "defined by certain Aspects with their characteristic Mode prefixes"(Midgette, 1995, p.43). Thus, the Aktionsart of a Navajo verb is the result of prefixes, both verb theme prefixes as well as others (such as Aspect and Mode). So, from a "mechanical" perspective, Indo-European Aktionsart is a lexical property, while Navajo verb theme category is partly a morphological property. Though Aspect and Aktionsart may certainly interact in Indo-European languages, Aktionsart in Indo-European is not generally determined morphologically as it is in Navajo.

4.2   The Semantic Difference

In addition to the morphsyntactic differences between Indo-European Aktionsart and Navajo verb theme categories, Midgette claims that there cannot be a one-to-one match up between Indo-European Aktionsart systems and the Navajo verb-theme system for semantic reasons. Specifically, she claims that the crucial features for English (and other languages like it) are: [±dynamic] (state vs. action), [±durative], and [±telic] (temporally bounded vs. not temporally bounded). The English system is illustrated in (5) (Midgette, 1995, p.28–29). In Navajo, on the other hand, the crucial features are: [±dynamic], [±durative], [±telic], and [±motion] (as well as [±single]). The Navajo system is illustrated in (6) (Midgette, 1995, p.28–29).

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[3]This tree likely represents an abbreviated form, and the full form of each terminal node would be a single property, rather than a pair of properties.

(5) English

```
                    ∧
            _____/ _____
           /                   \
      -dynamic              +dynamic
       (State)               (Active)
                          ____/ \____
                         /           \
                    +durative      +durative
                    __/ \__        (Achievement)
                   /       \
               +telic      -telic
              (Accomp)    (Activity)
```

(6) Navajo

```
                       ∧
              _____/ _____
             /                   \
        -dynamic              +dynamic
         (Neuter)              (Active)
                            ____/ \____
                           /           \
                       -motion        +motion
                     ___/ \___       (telic/atelic)
                    /         \
                single/     durative/
                plural     nondurative³
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(from Midgette (1995, p.27)) (from Midgette (1995, p.28))

4.3 The Representation of the Navajo System

Since Navajo encodes different levels of information structure, Midgette argues that we do not want to use the standard Indo-European Aktionsart system. Instead, she proposes to synthesize these Navajo features and the different Navajo verb themes into the structure in (7).

Before moving on, I wish to suggest an amendment to Midgette's representation. In her representation in (7), Operative (an action performed on many things) and Conversive (a completed action) are grouped together to the exclusion of Successive (an action performed repeatedly). I propose that, instead, Successive and Operative be grouped together to the exclusion of Conversive. Aside from the semantic similarities of an action performed repeatedly and an action performed on many things, there is an additional reason for this restructuring. Midgette (1995, p.50) says that Operative is viewed as durative and Conversive is viewed as non-durative. She also says that Successive is durative (Midgette, 1995, p.44). In addition, she notes that durative semantics occurs with the yi-Perfective marking (a certain kind of Aspect marking). Both the Successive and the Operative are marked with the yi-Perfective (Midgette, 1995, p.40,50). The Conversive, on the other hand, occus with the si-Perfective (a different kind of Aspect marking) (Midgette, 1995, p.50). Therefore, I suggest that a more natural grouping of these

(7) Situation types and verb theme categories in Navajo
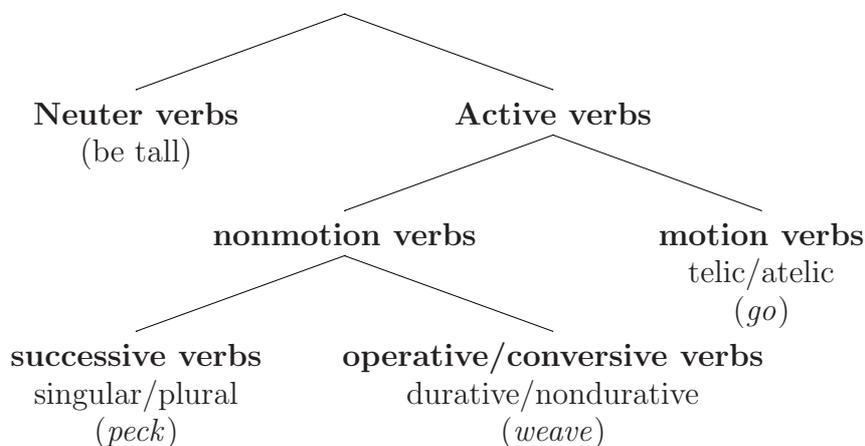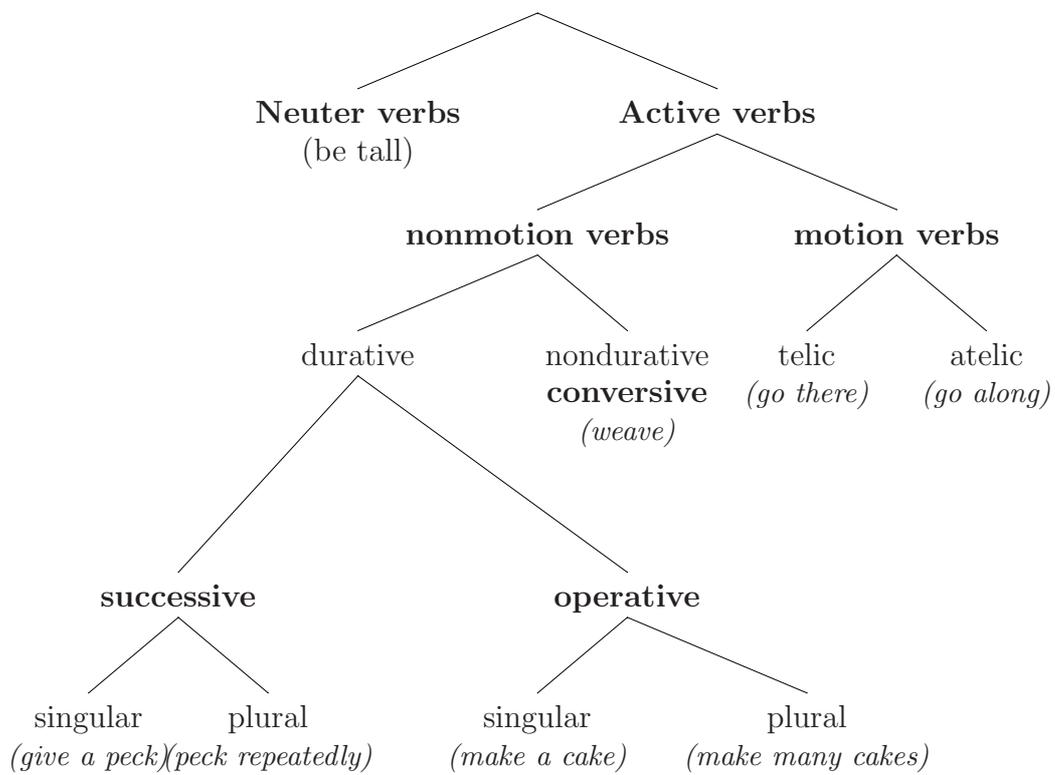

(from Midgette (1995, p.48))

items would be one which groups Successive and Operative together to the exclusion of Conversive. This is represented in (7'). I will use (7') throughout the rest of my paper, but it is not of vital importance. The arguments I present will hold (or fail!) equally well of either Midgette's original structure or my amended one.

In the following section, I seek a semantic resolution of English and Navajo event structure, and in section 6, I present a syntactic resolution.

5 The Semantic Unification of Navajo Verb Themes and English Aktionsart

As discussed above, there are some key semantic similarities between the Navajo system and the English system. These may be summarized as: the fact that there is a distinction between states (State for English, Neuter for Navajo) and actions (Activity, Achievement, and Accomplishment for English, Durative, Momentaneous, and Conclusive for Navajo); and the fact that there is a distinction between actions that end (Achievements and Accomplishments for English, Momentaneous and Conclusive for Navajo) and those that do not (Activity for English, Durative for Navajo).

(7') Aktionsart of Navajo verb types

```
                              ／＼
                         ／          ＼
              Neuter verbs         Active verbs
               (be tall)            ／      ＼
                              ／              ＼
                       nonmotion verbs      motion verbs
                        ／      ＼            ／      ＼
                  durative    nondurative   telic     atelic
                    ／  ＼     conversive   (go there) (go along)
                ／        ＼    (weave)
              ／            ＼
         successive        operative
          ／    ＼          ／    ＼
     singular   plural   singular   plural
  (give a peck)(peck repeatedly) (make a cake) (make many cakes)
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Below are some examples of the different Navajo verb theme categories (based generally on Midgette (1995, p.48), except where indicated by a '%' symbol, in which case it is my own example):[4]

(8) a. Neuter: *be tall*
     b. Singular, Successive, Nonmotion, Active: *give a peck*
     c. Plural, Successive, Nonmotion, Active: *peck repeatedly*
     d. Singular, Operative, Nonmotion, Active: *make a cake* (%)
     e. Plural, Operative, Nonmotion, Active: *make many cakes* (%)
     f. Conversive, Nonmotion, Active: *weave*
     g. Telic, Motion, Active: *go there*
     h. Atelic, Motion, Active: *go along*

I now attempt to apply the Indo-European Aktionsart labels to these categories. My primary goal in this section is to argue that the English and Navajo semantics are not fundamentally incompatible. Though Navajo has more verb theme categories than Indo-European languages have Aktionsarts, I suggest that this is simply due to the morphological richness of Navajo and not to deep semantic differences. It seems that the Navajo Neuter and the Indo-European State map onto each other fairly well. Recall that the Indo-European Achievement category pertained to those events that have an end point, that result in a dynamic event or a change of state, and which do not have a causative semantics. This seems akin to the Navajo Telic Motion category exemplified by *go there*. An event of *going somewhere* certainly has an endpoint and does not (in its basic sense) have causative semantics. Also, the going from one location to another might be perceived as a dynamic event or a change of state. If we accept this, then we may align Indo-European Achievement with Navajo Telic Motion. Next, we may see that the Singular Successive and Singular Operative (*give a peck* and *make a cake* (%)) relate to temporally-bounded events and possibly have causative semantics (cause to have a peck, cause a cake to exist). Thus, it might be reasonable to align these categories with the Indo-European Accomplishment category. Finally, Plural Successive events (*peck repeatedly*), Plural Operative events (*make many cakes* (%)), and Atelic Motion events (*go around*) all seem to

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[4]It seems to be the case that weave in Navajo, unlike in English, is conceived of as having an endpoint (e.g. *weave something*); thus, it is classified as Conversive. For example, (Midgette, 1995, p.51) gives the following sentence: Adą́ą́dą́ą́' atłó 'Yesterday s/he was weaving' and says that it is Conclusive (Conversive) (though Imperfective).

(9) Aktionsart of Navajo verb types
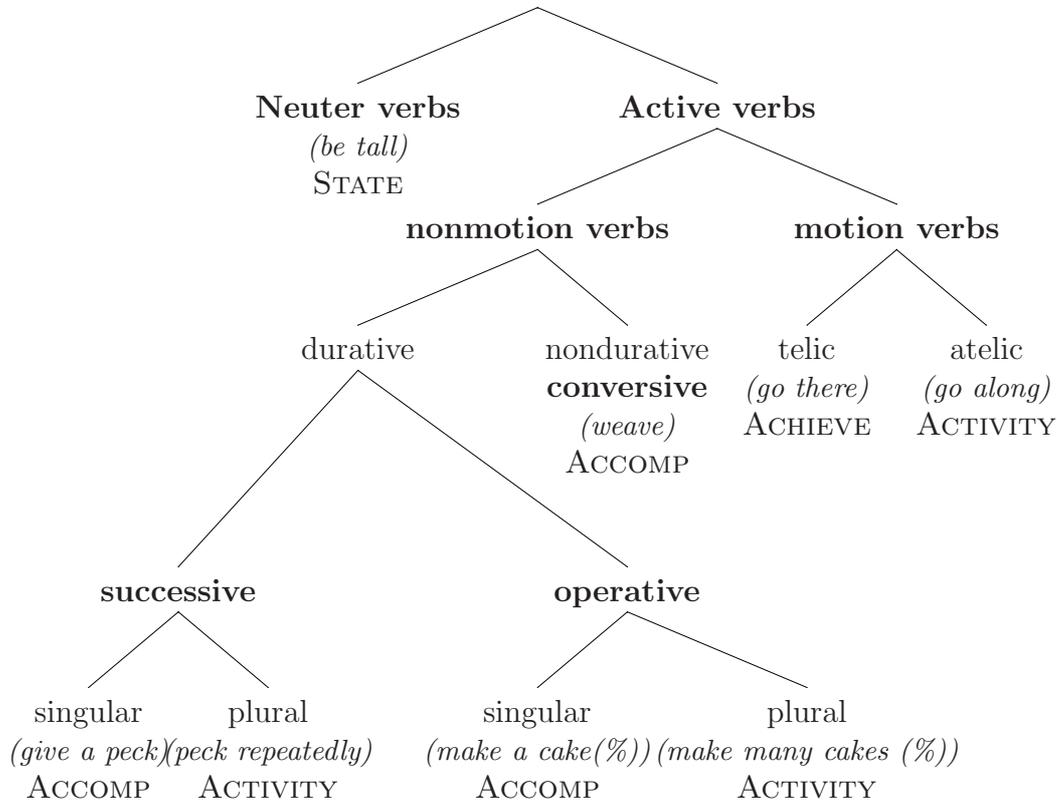
be actions lacking a clear endpoint. Thus, they resemble the Indo-European Activity Aktionsart category. These generalizations may be represented as in (9).

Though clearly the Navajo event structure system is organized differently from the Indo-European event structure system, still the Indo-European Aktionsart category labels seem to be applicable to the Navajo system. Therefore, I suggest that the semantic arguments for positing a Navajo system as distinct from the Indo-European one may reasonably be overcome. But this still leaves us with the syntactic problem: English (Indo-European) Aktionsart is the result of the lexical semantics of individual items, while Navajo verb theme categories are the result of syntactic operations. It is to this dilemma that I now turn my attention.

6 The Syntactic Unification of Navajo Verb Themes and English Aktionsart

6.1 Complex Aktionsart in English

Midgette (1995) feels that the Aktionsart labels are inappropriate for Navajo because Aktionsart is best applied to the pure (syntactically simple) lexical items of English, rather than the derived (syntactically-complex) verbal forms of Navajo. However, the line between English-type languages and Navajo-type languages need not be so sharply drawn. Harley (1999) shows that object DPs, PPs, and manners of verbs may influence their semantic properties. For example, consider:

(10) a. The baby drooled for an hour/*in an hour
     b. The mare foaled *for an hour/in an hour

(Harley, 1999, p.8,25)

In (10a,b) it is shown that the object may influence the Aktionsart of the predicate. In (10a), since drool is conceived of as something physically unbounded, the event is conceived of as an unbounded event. In (10b), since a foal is conceived of as something physically bounded, the event is conceived of as a bounded event. Syntactically, Harley (1999) represents this as a root (in object position) incorporating into a verbal (v) position. This is illustrated below in (11).
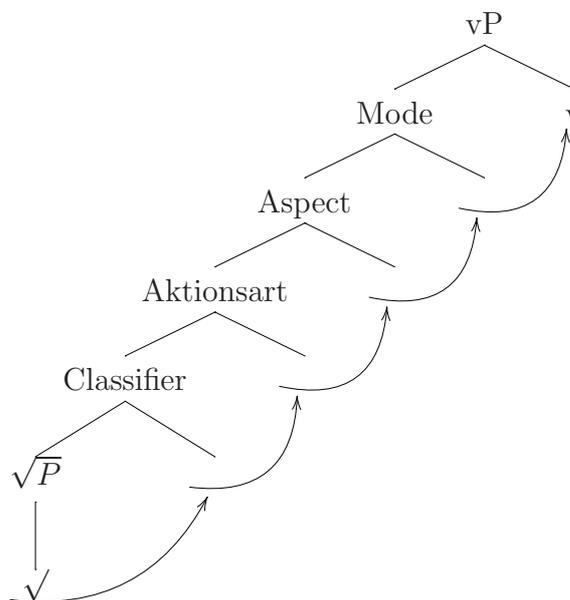
(11)
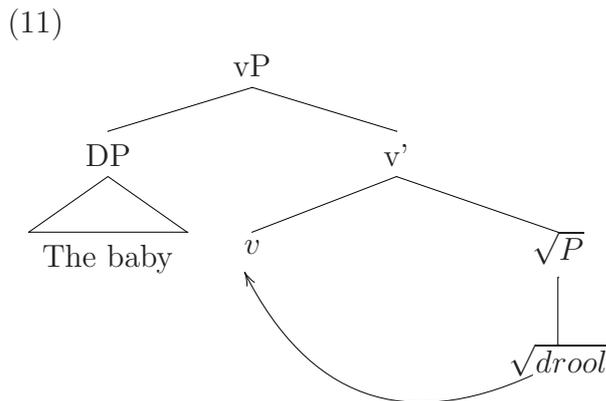
"The baby drooled" (Harley, 1999, p.9)

(12) a. English   b. Navajo

The tree diagrams for English and Navajo structures:

English:

```
           vP
          /  \
        DP    v'
       /  \   / \
  The baby  v    √P
                  |
               √drool
```

Navajo:

```
                        vP
                       /  \
                    Mode   v
                   /   \
               Aspect
              /     \
         Aktionsart
        /        \
   Classifier
   /       \
  √P
  |
  √
```
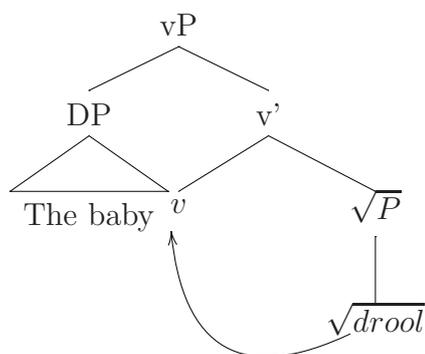
So, in Harley's system, objects exert a syntactic influence on verbs which affects semantic interpretation. I suggest that we may apply this type of analysis to Navajo: the theme prefixes on the verb in Navajo may exert a syntactic influence on verbal roots which affects their semantic interpretation. To implement this idea, I will appeal to the framework of Distributed Morphology (Halle and Marantz, 1993). In Distributed Morphology, there is no lexicon where word building is done before words are inserted into a syntactic structure. Rather, all word-building processes are done by the syntax itself. Syntactic operations put together words just as they put together parts of sentences. Thus, I suggest that the syntactic processes we find in English which allow arguments of verbs to affect the interpretation of verbs may be the same syntactic processes we find in Navajo, through which a verb's prefix(es) may affect its interpretation. A sketch of this is given in (12).

Furthermore, in Distributed Morphology lexical items are built from categorial roots. For example, the root $\sqrt{fan}$ is the root that will go into both the noun *fan* and the verb *fan*. In Navajo, verbs are built out of roots whose interpretation is sensitive to the syntactic environment, as in (13).

(13) ł + $\sqrt{kaad}$ $\longrightarrow$ 'it falls' *intransitive*
   ni + ł + $\sqrt{kaad}$ $\longrightarrow$ 'herd it' *transitive*

(Midgette, 1995, p.38)

This gives us a further indication that a Distributed Morphology treatment of Navajo morphosyntactic processes is motivated.
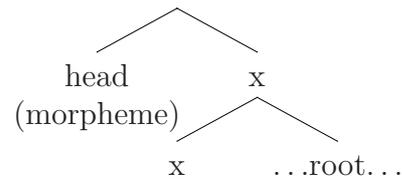
6.2   Two Kinds of Word Building

Marantz (2001, p.6) discusses such an approach to word building. He writes that there are two ways we may view syntactic word building: (a) morphemes are attached directly to roots; or (b) roots are merged into larger structures and then morphemes are attached to these structures. He illustrates this as follows:

(14) a.   b.
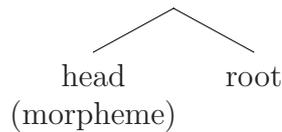
head   root   head   x
(morpheme)   (morpheme)
                                         x   . . .root. . .
morpheme attaching to root   morpheme   attaching to root
                              within larger structure
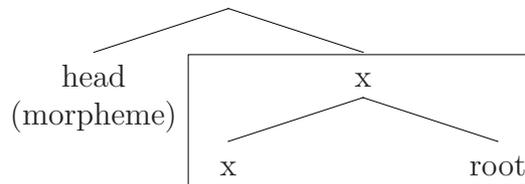
(Marantz, 2001, p.6)

If the word building is done via the process illustrated in (14a), whereby morphemes are attached directly to roots, then the interpretation of the root interacts with the interpretation of the morpheme attaching to it and the morpheme and the root will be interpreted together as one unit. If the word building is done via the process illustrated in (14b), whereby roots are merged into a larger structure and then morphemes are attached to that larger structure, then the structure containing the root (x + root) will be interpreted separately from the morpheme. Thus, in this case, the interpretation of the root will be interpreted in interaction with the structure it is inserted into (x), and the interpretation of this unit will then be fixed, independently of the morpheme attaching to it (Marantz, 2001, p.6–7). Marantz (2001) illustrates this as below:

(15) a.

b.
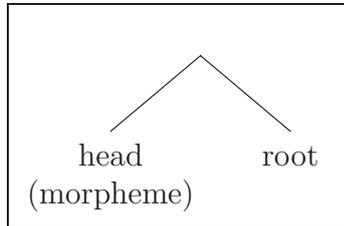
Morpheme and root inter-
preted together

x and root morpheme interpreted to-
gether, morph interpreted later with
[x+root] unit

(Marantz, 2001, p.7)

Arad (2003) provides us with a concrete illustration of this process. Using
data from Hebrew, this author shows us that the interpretation of words
is built up through syntactic processes. Hebrew has templatic morphology:
there are sequences of consonants which convey a general meaning and then
these sequences (called roots) have other consonants and vowels added to
them to yield meaningful forms. Arad presents the examples below:

(16) $\sqrt{\text{sgr}}$ is a root which has a general CLOSE meaning
Some forms we may get from $\sqrt{\text{sgr}}$
a. *sagar*   'to close'
b. *misgeret* 'a frame'
c. *miger*   'to frame'

(Arad, 2003, p.746)

The usual verb formed from $\sqrt{\text{sgr}}$ is *sagar* 'to close.' This verb is formed
directly from the root $\sqrt{\text{sgr}}$. But a verb may be formed indirectly from $\sqrt{\text{sgr}}$
as well. We see in (16b) that from $\sqrt{\text{sgr}}$ we may make the noun *misgeret* 'a
frame.' Then, from this noun, we may make a new verb, *misger* 'to frame.'
We know that *misger* 'to frame' is formed from *misgeret* 'a frame', rather
than from $\sqrt{\text{sgr}}$ directly, for two reasons: first, there is the phonological
similarity between *misgeret* and *misger* (the initial *mi-* sequence), which is
not found in *sagar* 'to close'; second, there is the interpretation—*misger*, a
verb based on $\sqrt{\text{sgr}}$, does not mean simply 'to close' as *sagar* does, rather, it
means 'to frame', just as *misgeret* means 'a frame.' Therefore, it seems that

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misger 'to frame' involves a process whereby the root $\sqrt{sgr}$ is made into the noun *misgeret* 'a frame', and then this noun is made into the verb *misger* 'to frame.'

Relating this to Marantz's (2001) suggestions, it seems that the straightforward verb *sagar* 'to close' is derived from a (verbalizing) morpheme attaching directly to the root $\sqrt{sgr}$. This is essentially the process illustrated in (15a). But in the case of *misger* 'to frame,' a (nominalizing) morpheme attaches to the root $\sqrt{sgr}$ yielding *misgeret* 'a frame.' These two are now conceived of and interpreted as a single unit. This unit then has a verbalizing morpheme attached to it to yield *misger* 'to frame.' This is essentially the process illustrated in (15b).

## 6.3 The Two Kinds of Word Building as Applied to Navajo and English

I wish to suggest that the differences between these two word formation processes are what account for the differences between English and Navajo. In English, verbal roots which already contain certain Aktionsart properties attach directly to verbal morphology such as person agreement, mood, etc. In Navajo, verbal roots attach first to Classifier morphemes. Then the root and the Classifier are interpreted as one unit. Then the root + Classifier unit has the Aktionsart (verbal theme) morpheme attached to it. This is now interpreted as one unit for the purposes of further syntactic processes. The sketch from (12) is repeated as (17).

Thus, in English, the root unit has its own Aktionsart, while in Navajo, the "root + Classifier + Theme" unit has its own Aktionsart. This unit is now available to further marking, such as person agreement, mood, etc. Though the Navajo the Aktionsart-bearing unit is morphologically complex whereas it is morphologically simple in English, still, in both languages there is a level of representation at which there are units with their own Aktionsart which are available for further morphological marking. In addition, the fact that in English objects may influence Aktionsart (as discussed in section 6.1) indicates that the complex word-building process we find in Navajo is available to English as well (or at least a process very much like it). Therefore, the same basic syntactic processes may be used to explain the Aktionsart of both English and Navajo. Crucially, I am not arguing that Navajo and Indo-European languages have the same syntax; rather, I argue that they are ruled

(17) a. English   b. Navajo

Interpretation of Aktionsart

Interpretation of Aktionsart
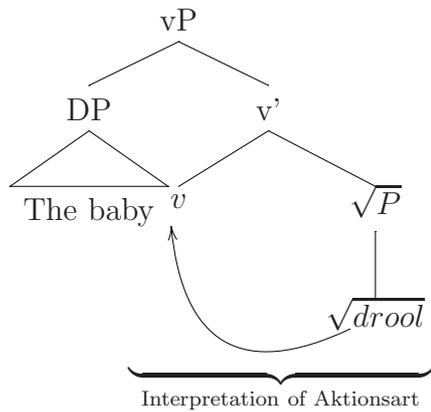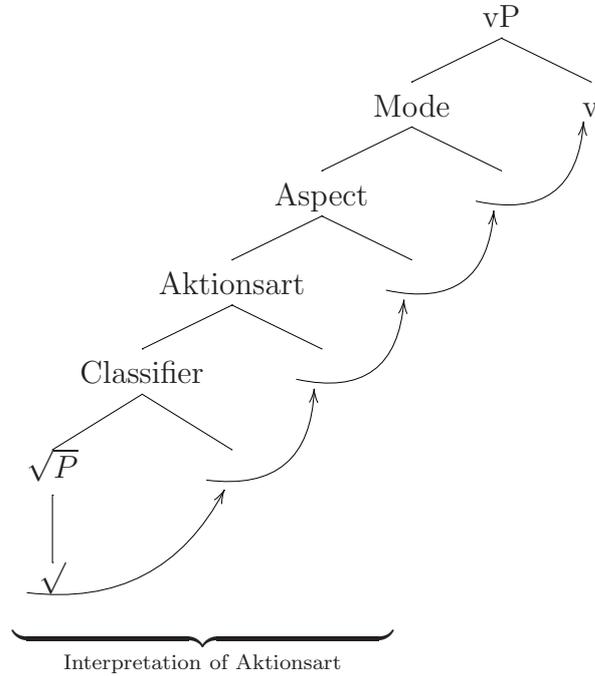
by the same syntactic processes.

7 Conclusion

Midgette (1995) argues that it is inappropriate to use the term "Aktionsart" in discussing the event structure of Navajo because of semantic and syntactic reasons. The semantic reason is that Navajo encodes more information in its verb theme categories than Indo-European languages encode in their Aktionsart categories. The syntactic reason is that Aktionsart is typically applied to non-derived lexical items, and Navajo verbs get their Aktionsart interpretations from syntactic processes. However, I showed that these two may in fact be reconciled. I demonstrated that the semantic content of the Indo-European Aktionsart labels may be applied to Navajo event structure. I also showed that, through using Distributed Morphology and through using a perspective where there are two processes by which words may be built up, we may use the same syntactic processes to account for the behavior of both English and Navajo verbs.