

THE ATHABASKAN LANGUAGES

*PERSPECTIVES ON A NATIVE AMERICAN
LANGUAGE FAMILY*

EDITED BY
THEODORE B. FERNALD
PAUL R. PLATERO

OXFORD STUDIES IN ANTHROPOLOGICAL LINGUISTICS

The Athabaskan Languages

OXFORD STUDIES IN ANTHROPOLOGICAL LINGUISTICS

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To the memory of Gladys Reichard,
Swarthmore College class of 1919.

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INTRODUCTION

Theodore B. Fernald and Paul R. Platero

The Athabaskan language family stretches from Alaska through northwestern Canada and also appears in the American Southwest and in isolated regions of Washington, Oregon, and California. Navajo is currently the most widely used with somewhere between 90,000 and 150,000 speakers. The reason for the high margin of error in the estimated number of speakers is easily imagined by people who are familiar with what happens with endangered languages. In the case of Navajo, it is difficult to decide whom to count as a Navajo speaker: many people spoke it fluently when they were children but no longer do. They may understand some Navajo when they hear it, but they may no longer attempt to speak the language themselves. The other Athabaskan languages are numerically far worse off than Navajo and are very unlikely to survive the coming century.

The chapters in this volume range from technical analyses of the grammars of these languages to issues involved in trying to preserve Navajo. They were all presented at, or are closely related to, the Athabaskan Conference on Syntax and Semantics held at Swarthmore College (Pennsylvania) from April 25 to 28, 1996. Most of the essays in this collection are technical works of scholarship, making a contribution to the ongoing effort to understand human language in general and the Athabaskan languages in particular. These articles represent the current state of the art, and it would be very difficult for people with no background in linguistics to make sense of them. The volume contains two nontechnical essays that might appeal to a wider audience. The first is this introduction, which will describe in some detail what the conference at Swarthmore was all about. It will conclude with a brief overview of the other chapters in this volume. The second nontechnical essay is a summary of a discussion of the interaction of sacred and secular aspects of Navajo culture and its effects on efforts to use the Navajo language in public education. This discussion took place at the Swarthmore conference. The nontechnical essays are presented in this volume alongside the theoretical chapters for two main reasons. One is that including them provides a reflection of the conference at which they were presented. The

other is that linguists need to do everything we can to help preserve the languages we work with.

The Swarthmore conference was unusual in that it brought together people and issues involved with intellectual, practical, political, and cultural work on Athabaskan. These issues are interrelated, but it is rare for theoretical linguists to get so deeply involved in them. (It is not rare for the linguists who are Navajos themselves to get so involved; one must confront fears of language shift every day.) This was a conference which combined work in theoretical linguistics with a series of discussions about ways to assist the speakers of Navajo with some of the problems surrounding the efforts to sustain it as a modern language. In addition to the linguists who work on Athabaskan syntax and semantics, we invited several educational professionals who are involved in teaching Navajo language and literacy to other Navajos. Our original goal was to have a discussion of a thesis of Paul Platero's, that efforts to preserve the Navajo language and culture would benefit from a separation of religious and secular cultural matters in educational settings. (A summary of this discussion is included in this volume.) Since we were inviting linguists and native speakers of Navajo to a conference, and since in the past it has been difficult for linguists to get consistent judgments on quantification data in the field, it was natural for us to have a discussion of data of this sort. As plans for the conference became more specific, it became clear that there was a need for a discussion of the gulf between academic theorists and language educators, so we added a discussion of these issues. The difference between theorists and educators does not quite coincide with the Navajo-Anglo distinction. Five Navajos who have doctoral degrees have produced linguistic work on Navajo. Four of them were present at the conference, and their presence changed the dynamics of the discussion. One of the high points of the conference came when the theoretical issues of Navajo linguistics were discussed in Navajo. This was a lengthy and sustained discussion of certain quantificational and scope taking particles and nuances of interpretation of sentences containing them. This may have been the first time ever that such a discussion took place in Navajo. It was a significant moment for those of us who seek to preserve the strength of Navajo language and culture; scientific investigation was being conducted about Navajo in Navajo.

This conference was unusual in a number of ways. To the Navajo educators, the strangest thing was its location in Pennsylvania, far from traditional Athabaskan territory. This is odd since many Athabaskans have a close personal connection to the land they inhabit. The conference was also unusual in that the participants consisted of theoretical linguists and language educators, and the topics under consideration covered two fairly distinct domains of inquiry.

The conference was held in Pennsylvania for a number of circumstantial reasons. Swarthmore College is where both of us were working at the time. Paul was invited here as the Eugene M. Lang Visiting Professor for Social Change to coteach a course on the structure of Navajo with Ted. In conversations between the two of us and also with Ken Hale and Clay Slate, the idea emerged of taking advantage of the opportunity in other ways. We decided to have a broader discussion of certain issues affecting the strength of the Navajo language. We realized that Pennsylvania was an odd location for a meeting about the Navajo language and culture, but we did not want to miss the opportunity with which

we were presented. In fact, there is a historical connection between Swarthmore College and the Navajo Nation: Gladys Reichard, the anthropologist and linguist who produced numerous works on Navajo grammar and culture, completed her undergraduate education at Swarthmore in 1919. Swarthmore is a college that is proud of its heritage. Holding the Athabaskan Conference on Syntax and Semantics at Swarthmore continues Reichard's legacy.

There were several reasons for creating a conference which focuses on both theoretical linguistics and issues of the interaction of education with language and culture. In the particular case of the groups involved in this conference, there had already been a fair amount of interaction going in both directions. Linguists have been involved in putting to pedagogical use the insights of their analyses, and professional educators have attended linguistics conferences in the past, to add insights from practice and to further their understanding of grammatical theory. In general, linguists and language educators have some very important common goals. For both groups, it is of tantamount importance that the speech community with which they work should survive. In the past, linguists have benefited the speakers of the languages on which they work by analyzing how the language works and sometimes by writing descriptive grammars. The product of linguistic analysis may be beneficial to members of the speech community if it can be used in pedagogical settings, in teaching grammatical analysis, for example. Although this is valuable work, in many cases it is not enough to help preserve the strength or even the existence of the speech community. Linguists need to be more deeply involved, both in an effort to maintain linguistic diversity and as a matter of fair exchange for the valuable data we obtain. Linguists customarily provide monetary compensation for the time and expertise of native speakers who are the source of their data. But money gets spent and disappears, often without providing a significant benefit to the community where the language is spoken. The discussion sessions at this conference represented an effort to offer something more useful to the Navajo culture by providing a forum for educational and cultural issues and by getting linguists more deeply involved in these concerns. The discussion of quantificational sentences, in addition to being useful linguistic research, was an effort to get Navajo language educators more deeply involved in work on theoretical linguistics, in hopes of stimulating their interest in the scientific study of the Navajo language.

The article reporting the discussion session of the conference considers the thesis that public schools in the Navajo Nation would benefit from a separation of secular and religious elements in Navajo culture. This separation would allow public schools to provide instruction of and inquiry into the secular domains, which would include the grammar of Navajo. This would make it possible for a portion of the culture to be discussed and investigated in schools without violating the doctrine of the separation of church and state. This would also make it possible for students who do not hold traditional Navajo religious beliefs to study secular aspects of Navajo culture. The proposal to make a distinction between the secular and the religious may be opposed in a different direction by those Navajos who believe that it would be impossible or improper to separate religion from other aspects of culture. The thesis is controversial, but it deserved to be discussed. We are not doing anything so presumptuous as to recommend policy, but we hope that our discussion will be of some benefit to the Navajo

Nation by clarifying certain issues. It is likely that other groups of American Indians are faced with similar difficulties in their schools. We hope that our discussion will be of use to them as well. Finally, we hope that linguists will be inspired to become more involved in finding ways to be of service to communities that are the source of the data we need. This conference has done this in two ways: by providing a forum for a discussion of language education issues and by involving language educators in the work of linguistic theory.

Both groups of participants in this conference view the endangerment of a language and a culture with great sadness. Languages are natural systems for encoding information in a way that makes sense to people. There are many different ways in which a human language can be configured, but these do not encompass every logical possibility. This apparently is due to the architecture of human brains. To figure out all that language can teach us about human cognition, we need to be able to study as many languages as possible. When a language dies, researchers lose a piece of the puzzle. The Athabaskan languages differ from the heavily studied Indo-European languages in a great variety of ways. This makes them especially valuable to linguists and cognitive scientists.

There is an intimate interaction between a culture and the language it uses. When a language is lost, the culture loses many of its art forms and possibly some of its concepts. The decline of a culture and a language involves many complex issues that we cannot cover adequately here. Although we are indulging here in generalizations, we hope the point is clear and uncontroversial. When a culture is lost, humanity loses a unique perspective of the universe and how people fit into it. The worldview of a culture is the result of a collective effort to follow assumptions about the universe to their logical conclusions. As our species faces technological, social, ethical, and political issues it has never faced before, we need every consistent set of assumptions about the universe that we can get. An example of this is the effort being made by Herb Benally and others at Navajo Community College to develop an educational curriculum that is consistent with Navajo philosophy. It was noted that the Anglo-American system of education has not been generally successful at providing Navajo young people with a basis for leading wonderful and exciting lives. We think the same can be said, in general, for Anglo-American young people. At a time when so many Americans are concerned with the state of education in our country, the perspective offered by another culture may make a valuable contribution.

These comments provide a view of the motivation behind this conference. The goals are consistent with those of a good number of educators and linguists. The Athabaskan Conference on Syntax and Semantics certainly did not address all the issues raised here, but the conference was designed to contribute in a modest way to their resolution.

The collection of chapters that this volume comprises may strike some as unusual, since it includes a discussion of certain sociological issues alongside theoretical work in linguistics. The volume reflects the unusual character of the conference. This was more than a traditional linguistics conference in which the speakers of the languages under scrutiny participate at best as observers. In organizing this conference, we tried to find a way to be of service to the community of native speakers who are our sources of data. They are from a culture that has been exploited in the past by European-American culture, and their culture

and language are struggling for survival. It behooves linguists to make contributions where we can. We would like to argue that what is unusual about the conference and this volume ought not to be so unusual. Linguists have a responsibility to any endangered speech community. Where there is a theoretical conference that focuses on the language of any such community, there ought to be sessions addressing ways to be of better service to the goal of preserving that community and its language.

Linguists are convinced of the value of linguistic diversity, but many other people are not. Linguists are, then, the most likely outsiders to care whether a speech community survives. This alone is reason for involvement, but there is a further matter. Aside from disease and war, the main challenges to the survival of a language come from economic pressures on the native speakers. Consider Navajo as a relevant case in point. Although there are a number of ways to make a living in Navajo country today, in nearly every case a worker will be more successful if he or she knows English, and there are fairly few jobs in which not knowing Navajo is a serious impediment. Tourism has been significant in the Navajo economy, but economic development in that direction adds pressure to stop using Navajo.

The Navajo language itself is one resource that is highly valued outside the Navajo community which could add pressure to retain the language. Unfortunately or not, the main market for this resource consists of linguists who depend on the existence of the speech community for data. Unfortunately, linguists do not command adequate financial resources to offset the economic pressures that push a speech community to abandon its traditional language. Although it is customary for field linguists to compensate their consultants, these arrangements never have a significant economic impact on the community: as far as we know, no one has made a career as a consultant for a field linguist. We are sure that many linguists would love the state of academic finance to allow such eventualities to obtain, but we cannot get off the hook so easily. We are obligated to do everything we can to contribute to the survival of an endangered speech community.

The theoretical essays in this volume focus mostly on issues of syntax and semantics. There is a major linguistic controversy surrounding the Athabaskan family, among certain others. The question is whether nominal expressions should be analyzed as arguments, as is traditionally assumed, or whether they are better treated as adjuncts coindexed with pronominal arguments that are incorporated into the verb. Chapter 11, by MaryAnn Willie and Eloise Jelinek, adds an important argument to this debate in support of the claim that nominals are adjoined. Chapter 2, by Leonard Faltz, extends these assumptions to account for various idiosyncrasies of Navajo semantics. Supporting the other side of the debate is Chapter 4, by Ken Hale and Paul Platero, considering facts about negative polarity items in Navajo. Ted Fernald, in chapter 3, article does not take sides in this debate but investigates some issues in genericity and the contrast between individual- and stage-level predicates. A better understanding of quantification in Navajo may eventually be relevant to the syntactic controversy.

Chapter 10, by Chad Thompson. and Chapter 5, by Dagmar Jung, deal with questions of word order in Koyukon and Jicarilla Apache, respectively. Keren Rice, in Chapter 8, considers issues of argument structure and subject in three

Athabaskan languages. She concludes that the position in which a subject appears depends on semantic properties of the subject rather than on any subcategorization mechanism. Melissa Axelrod, in Chapter 1, lays out nominal and verbal aspectual classification in Koyukon and draws parallels between them. Chapter 9, by Carlota Smith, concerns the interpretations of Navajo verb bases.

In Chapter 7, Joyce McDonough, argues that the position class does not exist as a morphological type. Her work is on Navajo, which in the past has been taken to be a canonical example of position class morphology. In Chapter 6, Jeff Leer takes a historical linguistics perspective leading to the reconstruction of negative/irrealis morphemes in Proto-Athabaskan-Eyak-Tlingit. There are numerous comments throughout on the syntactic and aspectual effects of these morphemes.

In addition to these articles, which were presented as papers at the conference, this volume includes an additional chapter that figured prominently in several of the conference discussions. Chapter 12, "The Function and Signification of Certain Navaho Particles" was written in the 1940s by Robert Young and William Morgan. The paper was published by the Education Division of the United States Indian Service, with an intended audience of Anglo educators of Navajo children. The original introduction was designed to explain to English teachers why their Navajo students seemed to sound monotonous when they spoke English. It explained that Navajo is a tone language and that emphasis and association to focus are accomplished by adding particles to sentential constituents rather than giving them intonational stress, as is done in English. The remainder of the article is a catalogue of Navajo particles with copious example sentences reflecting various nuances of meaning. This catalogue has been highly sought after by linguists who work on Navajo natural language semantics, but copies of it have been very hard to locate. This volume includes the original article in its entirety along with a new introduction by Robert Young. It is being included in this volume as a service to scholars and because it figured prominently in the discussion sessions of the conference.

THE SEMANTICS OF CLASSIFICATION IN KOYUKON ATHABASKAN

Melissa Axelrod

The aspectual system of Koyukon¹ is perhaps the most elaborate of the Athabaskan languages. It has a complex network of four modes, 15 aspects, four superaspects, four postaspectual derivations, and some 300 aspect-dependent derivational prefix strings, allowing thousands of distinct and very precise characterizations regarding the time frame and type of verbal notion expressed.

Koyukon also has an extensive system of classifying both nouns and verbs. Its noun classification system consists of six gender classes (including a zero class), which categorize nouns according to size, shape, consistency, and material. The language also has a set of the classificatory verbs, which are a well-known feature of Athabaskan languages. These verbs specify the shape, material, consistency, size, location, arrangement, and number of their nominal arguments.

I will suggest here that the aspectual system of the language classifies verbal actions in a manner that is parallel to the way that gender and classificatory verbs classify nouns. I'll begin with a brief summary of Koyukon noun classification, and then go on to demonstrate how aspect works to classify verbs into categories or types of action. The second part of the chapter will explore parallels between the semantic features used to class verbs and those used in noun classification. The final section of the chapter will point out similarities in the

discourse-pragmatic uses of both classificatory systems, both noun classification and aspect, in discourse.

1.1 Noun Classification

Beginning with Koyukon noun classification, I will briefly describe here both the classificatory verb system and the gender system. Koyukon verbs in general show a wide range of classificatory functions. Some verbs are specialized according to whether the subject of the action is singular (or dual) or plural. Others are specialized for singular vs. plural objects. Still other actions are referred to by different stems depending on the physical characteristics of the subject or object involved. These stems are the classificatory verb stems.

In most noun classification systems, the extralinguistic factors that speakers consider important in distinguishing categories are material, shape, consistency, size, location, arrangement, and quanta (Allan 1977). These are the categories delineated by the Koyukon classificatory verbs. The following list² shows the 11 intransitive verb themes³ that classify objects in position.⁴

Koyukon Classificatory Verbs

| | |
|--------------------|---|
| <i>G+ø+'o</i> | 'compact object is in position, is sitting there' |
| <i>G+ø+ton</i> | 'flat, rigid, or sticklike object is there' |
| <i>G+ø+lo</i> | 'plural objects are there' |
| <i>ø+kko</i> | 'object in an open, shallow container is there' |
| <i>G+!+ton</i> | 'bag or enclosed object is there' |
| <i>G+!+kooł</i> | 'flat, flexible, or clothlike object is there' |
| <i>G+!+koot</i> | 'food, edible object is there' |
| <i>de+!+t'on</i> | 'burning object is there' |
| <i>G+de+dzok</i> | 'disorderly, scattered plural objects are there' |
| <i>G+de+!laakk</i> | 'mushy, wet, messy object is there' |
| <i>de+de+nokk</i> | 'granular or powdery substance is there' |

The first of these themes, *G+ø+'o*, is used to describe such diverse items as beads, buckets, hills, typewriters, hats, and houses—it is the largest category of objects referred to by classificatory verbs. What these so-called compact objects have in common is that each has a height, length, and width that are roughly comparable, no protruding or extending parts, and extremities which are close to the center of gravity. This is, however, the least specified category and seems to contain all those objects whose characteristics are not clearly specified by one of the other classificatory verbs.

The second theme in the preceding list, *G+ø+ton*, describes the second-largest category of objects. In addition to flat, rigid objects such as sheet iron, trays, or snowshoes and elongated objects such as sticks or spoons, this theme also describes sleds and canoes (and by extension all other vehicles, e.g., cars, snow machines, ships) and shallow containers such as dishes, cups, or roasting pans.

The classificatory verbs are combined with the gender system of the language

to allow very explicit reference to particular sorts of objects. There are six gender classes, marked by the verb prefixes shown:

Koyukon Gender Prefixes

1. *ne-* faces, berries, beads, thimbles, string, rope
2. *de-* wood, plants, furniture, mittens, boots, rigid containers
3. *dene-* round, heavy objects: animal heads, cabbages, apples, rocks;
long, cylindrical objects: pipes, bridges, pencils, guns
4. *hɛ-* the areal prefix, used also to classify areas, events, abstract ideas
5. *hede-* weather
6. *zero* people, animals

Many verbs, including the majority of the classificatory verbs, are obligatorily marked for gender. The interaction of gender and classificatory verb stem can be seen in the items classified by the first two themes listed above. With *de-* gender, derivatives with the stem *-on* refer to bottles, jars, and cans, as in example (1):

- (1) *boogee daal'onh*
boogee de + le + ø + 'onh
 flour G + M/A + CL + classif.: compact objects
 'A canister of flour is there.'

Derivatives with *de-* gender and the stem *-ton* refer to boxes, as in example (2):

- (2) *boogee daaltonh*
 'A box of flour is there.'

The stem *-kkon* is used to describe the contents of all such containers, but its focus is not on the container itself.

The examples that follow give an idea of the range of meaning of the classificatory verbs:

Semantics of Classificatory Verbs

- | | |
|-------------------------|---|
| <i>boogee le'onh</i> | 'A lump of flour is there.' |
| <i>boogee daal'onh</i> | 'A canister of flour is there.' |
| <i>boogee daaltonh</i> | 'A box of flour is there.' |
| <i>boogee etltonh</i> | 'A bag of flour is there.' |
| <i>boogee lekkonh</i> | 'A bowl of flour is there.' |
| <i>boogee ledlo</i> | 'Lumps of flour are there.' |
| <i>boogee etlkoot</i> | 'Flour is there (stored as a provision).' |
| <i>boogee etlaakk</i> | 'Dough is there.' |
| <i>boogee daatenokk</i> | 'Loose flour is there.' |

1.2 Aspectual Verb Classification

The combination of classificatory verbs and gender acts to categorize the nominal portion of the Koyukon lexicon. As nouns are classified and described via the gender and classificatory verb system, verbal notions in Koyukon are grouped and described via aspect (see Axelrod 1993 for a fuller description of verb classification in Koyukon). In addition to the four modes of Koyukon (imperfective, perfective, future, and optative), there are 15 aspects (or *aktion-sarts*) which can be classed into three general groups. The first group is made up of those aspects which are used in referring to an entity's state, condition, position, or existence. State aspects include the neuter and the transitional. The second and third groups are made up of aspects used in the expression of activities or events. The second group, motion aspects, refer specifically to the path or manner of an activity through time or space: momentaneous, perambulative, continuative, persistive, and reversative. The third group, the activity aspects, contains those aspects which refer to the durativity, cyclicity, or punctuality of an activity; these aspects are the durative, consecutive, repetitive, directive-repetitive, semelfactive, bisective, conclusive, and onomatopoeic.

As in other Athabaskan languages, mode and aspect in Koyukon are marked morphologically by prefixation and also by suffixation and/or vowel lengthening and/or ablaut of the verb stem. The mode and aspect system can be diagrammed, as in figure 1.1, to illustrate this intersection of mode and aspect. Notice that mode in this figure forms a horizontal axis and aspect a vertical axis.

A verb will have four possible stems for each aspect that it allows: an imperfective stem, a perfective stem, a future stem, and an optative stem. The stem set for the verb 'chop' thus has four momentaneous stems: *tlaaʔ* (imperfective), *tlaatl* (perfective), *tletl* (future), and *tlaaʔ* (optative). It also has four durative stems: *tlaaʔ*, *tlaatl*, *tlaaʔ*, and *tlaaʔ*. This verb allows eight different aspects and thus has 32 stems (i.e., eight times four) in all, though many of these stems are homophonous (and disambiguated by prefix morphology).

It has been suggested that noun classifiers group nouns according to their inherent properties (Lee 1988:228; Paprotte 1988:457), while aspect groups verbs by perceived characteristics. In fact, while the speaker does choose how to classify an activity, the choices are often quite limited or constrained by the external character of the activity or event in question. A speaker of English, for example, can't choose to categorize the verb 'know' as an event or as a process with discrete intervals; it must be categorized as a state because of inherent properties of the concept the verb expresses. Similarly, 'cough' can't be expressed with the aspectual marking associated with states because the inherent semantics of the verb naturally require it to be considered a punctual activity. These constraints on choice are perhaps more overt in Koyukon than in other languages because there is such an elaborate system of morphologically marked aspect and *aktion-sart*.

Each verb in Koyukon allows only a particular set of the 15 possible aspects. The verb 'chop', for example, allows semelfactive ('do it once') derivatives in addition to durative and momentaneous (motion) ones. The verb 'eat' permits durative and momentaneous derivatives, but not semelfactives, while the verb 'go by foot' allows momentaneous derivatives but neither semelfactives nor duratives. Koyukon aspect is thus tied to the inherent properties of verbal concepts in much the same way that noun classification is tied to the inherent pro-

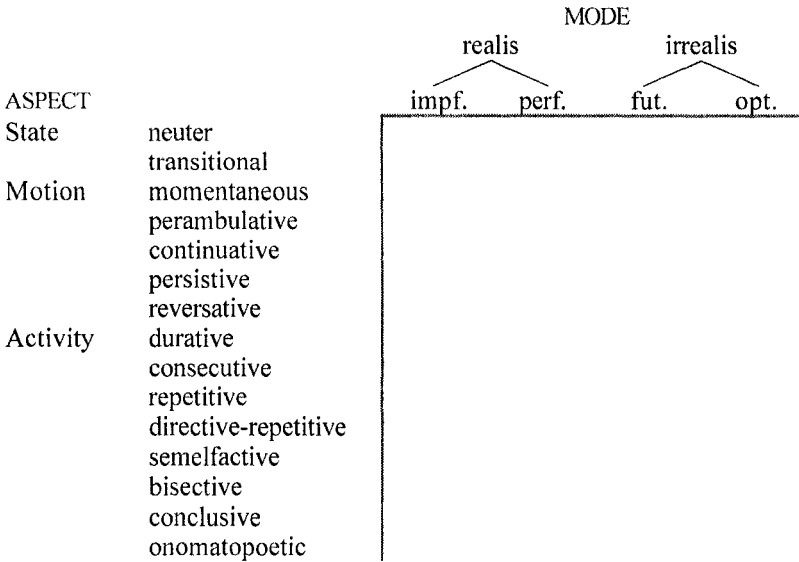


FIGURE 1.1. *The Koyukon Modes and Aspects*

perties of nominal concepts. We can, however, view a concept from different perspectives in both kinds of systems. In Koyukon the difference between ‘bite’ and ‘chew’, for example, is indicated by different aspectual derivatives of the same verb root. Similarly, the difference between a lump of flour and a bowl of flour is indicated by gender prefix and classificatory verb.

In Koyukon we can clearly distinguish categories of verbs defined by semantic constraints on aspectual choice, and these are the categories we call aspectual verb theme categories. Verb themes are the bases from which all verbs in the language are derived. Each theme consists of a verb root plus a classifier prefix and perhaps other thematic, or lexical, prefixes. A verb form derives from the addition of derivational and inflectional material to the basic theme. These verb themes are grouped into larger categories on the basis of shared formal and semantic characteristics. Formally, each of the seven major categories is characterized by a particular aspect—that is, the primary (or least marked) derivative of each is of a particular aspect or mode and aspect combination (e.g., the primary aspectual derivative of ‘eat’ is durative, and the primary aspectual derivative of ‘go by foot’ is momentaneous). Because each verb theme category is associated with a particular aspect or group of aspects, each can also be characterized as having a particular semantic core. Table 1.1 shows the primary (or diagnostic) aspect and the semantic range associated with each of the categories. Verb theme categories are a means of describing or symbolizing the morphological and semantic similarities shared by a group of verb themes.

In the kind of aspectual classification we see in Koyukon, six important features used to distinguish categories can be identified:

| | |
|---------------------|---|
| <i>movement</i> | Is motion an integral part of the verbal expression? |
| <i>direction</i> | Does it have a particular direction, bearing, or course? |
| <i>countability</i> | Can the activity/event be considered a discrete or bounded unit, or does it have persistence and duration without bounds? |
| <i>telicity</i> | Is it an activity that leads to a particular goal? |
| <i>orientation</i> | Is location, arrangement, or alignment a defining factor? |
| <i>essence</i> | Can it be predicated as inherent to the entity, or is it a temporary or contingent characteristic? |

Figure 1.2 illustrates how these distinguishing features are associated with each of the verb theme categories. (Features are shown in lowercase type and theme categories in capital letters.)

As figure 1.2 is intended to illustrate, the feature “movement” distinguishes the motion theme category and the three activity categories (successive, conversive, and operative), all of which are [+movement], from the state theme categories (extension, descriptive, and stative), all of which are [-movement]. The motion theme category is distinguished from the active categories by the feature [\pm direction]: verbs of the motion theme category (e.g., ‘go by foot’, ‘swim’) generally specify the direction, bearing, or course of the movement, while this specification is not a primary semantic feature of verbs of the other activity categories. The other activity categories are distinguished from one another by the features of countability and telicity. Verbs of the successive category (e.g., ‘chop’, ‘kick’) specify actions that are punctual—countable and discrete units. Verbs of the conversive theme category (e.g., ‘make a single object’) are telic, goal-directed. Verbs of the operative theme category (e.g., ‘eat’, ‘see’) refer to durative ongoing activities which are neither countable nor telic.

The state verb theme categories, on the right of figure 1.2, do not specify movement. Verbs of the extension category (such as ‘ridge extends’, ‘land slopes’) generally refer to the orientation of an object, i.e., location, arrangement, and/or alignment, while verbs of the descriptive and stative categories do

TABLE 1.1. *Diagnostic Aspect and Semantic Characteristics of Verb Theme Categories*

| Category | Primary Aspect | Semantic Range | Example |
|-----------------|--------------------|-------------------------------|-------------------|
| STATE | | | |
| Stative | le- neuter | location contingent quality | ‘sit’ |
| Descriptive | \emptyset neuter | inherent quality | ‘good’ |
| Extension | ne- neuter | position extending over space | ‘ridge extends’ |
| ACTIVE | | | |
| Motion | momentaneous | movement over space or time | ‘go by foot’ |
| Activity | | | |
| Operative | durative | process | ‘eat’ |
| Conversive | conclusive | goal | ‘make one object’ |
| Successive | semelfactive | punctuality | ‘chop’ |

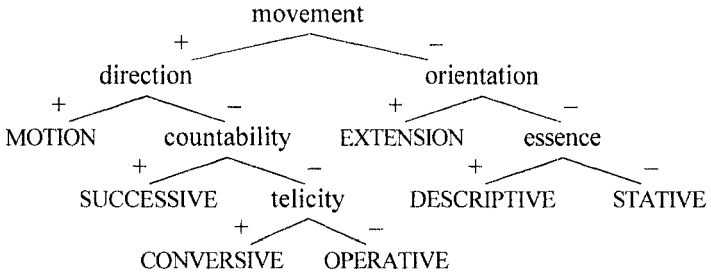


FIGURE 1.2 *Semantic Features and Verb Theme Categories*

not. The descriptive category is comprised of verbs which refer to essential or inherent characteristics of an object (e.g., ‘good’, ‘big’) while stative verbs are used to refer to noninherent qualities (such as ‘sit’, ‘be in a particular position’).

1.3 Semantic Parallels between Verb and Noun Classification in Koyukon

Many of these semantic features shown in figure 1.2 can be seen as parallel to those illustrated for the classification of nouns via gender and classificatory verbs listed previously. In the next sections, I will sketch how these six features inform both noun classification and aspectual verb classification.

1.3.1 *Movement, Direction, and Orientation*

The aspectual features of movement, direction, or orientation are comparable to the features of shape and arrangement most commonly associated with noun classification. Orientation or arrangement is the defining feature of extension verbs. An example of an extension verb is shown in (3), which describes the position and alignment of an item:

- (3) *neck’et* (extension neuter)
 ‘It is stretched out.’

Orientation or arrangement is an important feature throughout the noun classification system. Compare, for example, *boogee etetlaakk* and *daatenokk*, ‘the flour is there as dough’ vs. ‘as loose flour.’ Compare, too, the spatial orientation implied by the shape characteristics specified by the gender prefixes. The shape of an object, whether long, flat, round, is an essential classifying feature for both the gender prefixes and the classificatory verbs. Similarly, the shape of an activity is what is marked in the aspectual system, both by orientation, in extension verbs such as example (3), and also by direction in motion verbs. For example, the momentaneous describes a linear path of motion, motion up to a particular point in time and/or space, as in example (4):

- (4) *neebaanh* (momentaneous)
‘S/he arrived swimming.’

The continuative, another motion aspect illustrated in (5), expresses a round trip motion, tracing an elliptical path to goal and then returning to its source.

- (5) *ceyet nelbaanh* (continuative)
‘S/he swam there and back, made a round trip to there swimming.’

The perambulative, on the other hand, expresses a wandering movement, a path with a more free-form shape. A perambulative derivative is shown in example (6):

- (6) *kk’o’eedebaayh* (perambulative)
‘S/he is swimming around going here and there.’

Both motion and extension verbs focus on shape, as do many of the gender prefixes and noun classifying verbs. In the aspectual expression of shape, the motion aspects indicate the shape, or direction, of movement while the state mode and aspect combinations can indicate shape or orientation of a more static verbal concept.

1.3.2 *Countability and Telicity*

Countability is a feature that has long been recognized as applying to both verbal and nominal components of the lexicon. Bolinger (1975:147), for instance, says,

Mass and count do more than cut the noun class in half—they do the same with verbs, in a very special way. Any verb can be either mass or count according to its form. In too much talking, the verb is mass. In He talked for a moment it is count, in the sense that there can be many such moments of talking. Grammarians refer to this distinction in verbs as aspect. If a noun or verb refers to one instance of something (a flash, he jumped), the instances are countable; if not, the sense is mass (light, jumping).

Countability is a defining feature of Koyukon successive verbs, where the distinction between punctual and ongoing activity is primary. Compare the punctual semelfactive example in (7) with the consecutive example in (8):

- (7) *yceltlet* (semelfactive)
‘S/he chopped it once, gave it a chop.’

- (8) *yegheetletl* (consecutive)
 ‘S/he chopped it repeatedly, gave it a series of chops.’

Activities expressed within the successive verb theme category are viewed as discrete countable units, as in (7) and (8), or they are viewed as ongoing rather than countable, as in the durative example in (9):

- (9) *yegheetlaatl* (durative)
 ‘S/he was chopping it (for a while).’

Both the semelfactive derivative in (7) and the consecutive derivative in (8) refer to the activity of chopping from the viewpoint of punctuality—we’re conceptualizing separate instances of activity, single chops. The successive category encompasses as well the possibility of seeing the activity as nondiscrete, as in the durative example in (9). The activities expressed via the successive category are those that can be conceptualized from either viewpoint (as opposed to verbs of the operative category, which can only be viewed as nondiscrete and durative). The semelfactive and consecutive aspects allow the specification of countability.

Countability is also specified for nouns via the classificatory verbs, as in the singular *boogee le'onh* ‘a lump of flour is there’ and the plural *boogee ledlo* ‘lumps of flour are there.’ Just as activities can be described as countable (with the semelfactive and consecutive aspects) or as a noncount whole (with the durative aspect), nominal objects can be characterized as countable (‘a single lump’ vs. ‘several lumps’) or as noncount masses with the classificatory verbs. This mass characteristic is expressed by *boogee daafenokk* ‘loose flour is spread around’ and by the derivatives with *-tlaakk* ‘mushy, wet object’ and *-dzok* ‘disorderly, scattered objects.’ The gender prefixes *hə* ‘areal’ and *hede* ‘weather’ likewise refer to mass or abstract notions, while the first three gender prefixes listed in section 1.1 refer to countable entities.

Telicity is a defining feature of verbs of the converse theme category, which describe activities leading to a goal, such as ‘cutting out a shape’ or ‘making a sled’, as shown in examples (10) and (11).

- (10) *yeghedaaltlaatl* (conclusive)
 ‘S/he hewed it into a shape.’

- (11) *hətl etltseenh* (conclusive)
 ‘S/he made a sled.’

These verbs provide a view of the activities of ‘chopping’ and ‘constructing’ from the perspective of their outcome, purpose, or goal. The notion of purpose and goal can also be specified for nouns using classificatory verbs. Compare *boogee daafenokk* ‘loose flour is spread around’, an expression which focuses on the mass characteristic of the flour, with *boogee lekkonh* ‘a bowl of flour is

there' and *boogee etlkoot* 'flour is there stored as a provision' which focus more directly on the purpose or intended use of the flour.

1.3.3 Essence

The last feature indicated in figure 1.2, essence, is the feature that distinguishes descriptive verbs like 'good', from stative verbs which refer to derived or temporary characteristics like 'be lying down.' This feature is an important feature in noun categorization in Koyukon as well. Notice that *o* 'compact object', \emptyset +*ton* 'rigid flat or stick-like object', and *koot* 'flat, flexible object' all specify the essential shape of the object they refer to—these verbs are required in referring to objects of a particular shape in a nonmetaphorical manner. These verbs have counterparts in other verbs in the lexicon; for example, the motion themes *G*+ \emptyset +*ghet* 'rigid flat or sticklike object moves independently, falls' and *G*+ \emptyset +*nekk* 'flat, flexible object moves independently, falls' refer specifically to objects of the same characteristics as do \emptyset +*ton* and *koot*.

The other classificatory verbs do not emphasize the essential shape of an object. Four of the classificatory verbs clearly refer to achieved or derived characteristics of the objects they are used to describe: *kko* and *t*+*ton* refer to contained objects, *koot* refers to the object's use as a foodstuff, and *t*'*on* refers to an object which is burning. The remaining four classificatory verbs are more ambiguous as to whether they refer to essential or derived physical characteristics: *lo* 'plural objects' draws attention to the plurality of the object referred to, while *dzok* 'disorderly, scattered objects', *laakk* 'mushy, wet object', and *nokk* 'granular or powdery substance' emphasize mass nature or amorphous condition of the object to which they are used to refer.

1.4 Discourse Functions of Classification

The previous section argued that the semantic features by which Koyukon nouns are classified spatially have parallels with those by which verbs are classified both temporally and spatially. We shall see in the following discussion that the uses of both noun class and aspectual verb classification in discourse also have similarities; both provide strategies for maintaining referential and structural cohesion.

1.4.1 Discourse and Noun Classification

It has been said (e.g., Denny 1986:303; Aikhenvald 1993) that noun classifiers serve an anaphoric function in referring to items introduced via nominal reference earlier in a discourse. Noun classifiers also have an additional but related role: they establish expectations about what verb predicate the speaker is likely to use and about what other predicates are likely to be relevant in subsequent discourse. "A noun classifier," writes Denny, "expresses the speaker's claims as to the sort of thing he is going to talk about. This sort communicates expectations about the predicates which he might assert for that thing—this is the

classificatory role” (pp. 306–7). Hence, noun classifiers serve both a cognitive and a discourse function.

Mithun (1986:395) agrees that “the modification of these predications in terms of the classes of entities they involve permits speakers to deal with large quantities of information in efficient ways.” Like other anaphoric strategies, classifiers allow speaker and hearer to reliably track the referents in a conversation or narrative, and they provide cohesion between the structural parts of a discourse. Example (12) is from the personal historical narrative of Chief Henry, *Chief Henry Yugh Noholnigee*, “The Stories Chief Henry Told.” Here we see an example where the classificatory verb for handling plural objects (-*lo*) is used with a *de-* gender prefix to refer back to the boxes of shells mentioned three lines earlier and thus maintain referential continuity:

- (12) *Ts’uh bugh yooghsikkaat ts’uh*
 ‘And so I bought it from him and’

k’edotlaa’ yaasek neteekk’ee yaan’,
 ‘just two boxes of shells.’

“Go es huyaan’ kk’adaa bedotlaa’ be’est’aanee,” yetnee.
 ““These are the only ones I have to go with it [a gun],” he said.”

Ts’uh ecydee
 ‘So there’

yeyet setl’odegheelo.
 ‘he gave me those [the shells] along with it [the gun].’

Example (13), from the folktale “She’s Dragging Her Bag,” told by Catherine Attla, again shows the use of the classificatory verb for handling plural objects (-*lo*) with a *de-* gender prefix, referring anaphorically to a stick of skewered fat left for a child.

- (13) *Dehoon k’ekk’uh begħunk’edaal’oy yetoŋts’ooz laaghe*,
 ‘And he left skewered fat for him to suck on,’

yetoŋt’uga laaghe soo’ yugh needaaneelo.
 ‘he left that there for him to lick.’

These examples show, as Mithun suggests, that noun classification allows efficient tracking of referents within a stretch of speech. Another way of making the flow of information more efficient is by providing a context. Gender and classificatory verb stem derivatives are used both to refer anaphorically to referents introduced earlier and also to introduce a new referent or context without its being named explicitly. Bransford and Johnson (1973), among others, have demonstrated the utility of visual contextual information in improving comprehension, providing retrieval cues, and thus improving recall. Koyukon noun classification, with its focus on shape, number, purpose, and condition, can provide an important visual frame or context for speakers’ utterances. They

allow the hearer to integrate new information with prior perceptual knowledge about the world. For example, in (14), Chief Henry uses the classificatory verb for handling plural objects to refer to gutting an animal. We have a visual image of plural objects being taken out of the animal's body; with no explicit mention of guts, we have a clear understanding of the activity.

- (14) *Ts'uh*, "Ggenaa",
 'And so, "My friend,'
eey daaggo ghenee tlaa nohudeenkk'oyh dehoon
 'build a fire for that ptarmigan and meanwhile'
dodegge
 '(I'll go) up there'
dedaayee tlee' eenaaghst'ut konh ts'aak'etaaghslaaf," setnee.
 'and I'll cut off the bull's head and gut it," he said to me.'

Classificatory verbs, then, are a means of providing explicit contextual cues and in this way serve an important function in concept formation and comprehension. Gender is also used to provide contextual information. These prefixes are often used to further specify the shape of a item previously introduced in the discourse. Example (15) is from Chief Henry, and shows the use of the *de-*gender prefix, used to refer to rigid containers, to specify that the milk he had was in a can:

- (15) *Doo'*,
 'Well,'
doogh Eagle milk yaan' daaghs'ot ts'uh
 'carrying just a can of Eagle milk'
nonotaalseyo.
 'I started back across the river.'

Example (16), also from Chief Henry's narrative, shows the use of the classificatory verb for compact objects to specify that the snow he had was compact or hard-packed:

- (16) *Eeydee yee*
 'And over that'
tseetl dol'onh
 'he put some hard-packed snow.'

1.4.2 *Discourse and Verb Classification*

The functions of verbal aspectual distinctions in discourse and cognitive processes are actually quite similar to those outlined for noun classification. As is the case with noun classification, aspect too serves to provide a visual context or frame for the speaker's utterance. Examples (4)–(6), repeated here as (17)–(19), demonstrate this use of aspect in specifying the path and thus providing a spatial frame for the movement:

- (17) *neebaanh* (momentaneous)
'S/he arrived swimming.'
- (18) *eeyet nelbaanh* (continuative)
'S/he swam there and back, making a round trip.'
- (19) *kk'o'eedebaayh* (perambulative)
'S/he is swimming around going here and there.'

This extra visual information about shape, number, purpose, and condition of states and events that aspect provides can make ideas less abstract and thus easier to comprehend and establishes expectations about what may come up in later discourse.

Aspectual classification then can assist in integrating the new information about participants and events that the hearer is absorbing with what she/he already knows about what events look like. According to Reed (1988:146), classification can "determine what we emphasize in a text and can provide a framework for recalling ideas." In this sense, verb classification also has an anaphoric function. This function is achieved in large part through the use of repetition. It is the repetition of particular aspects with different verb roots and the repetition of particular roots in different aspectual derivatives that provide the means for maintaining referential continuity and textual cohesion in Koyukon discourse.

In their analysis of cohesion in English, Halliday and Hasan identify repetition as an important factor. According to Maynard (1982), "Halliday and Hasan list three types of cohesion, namely, (1) relatedness of form, (2) relatedness of reference, and (3) semantic connection." Cohesion occurs, they say, "when the interpretation of some element in the discourse is dependent on that of another" (1976:4; cited in Maynard 1982:20).

Tannen (1987) also argues that repetition is an essential strategy in cohesion and in meaning-making. Repetition is a strategy used in both literary and conversational discourse to involve the audience in the speaker/writer's theme and to effect their participation in creating or negotiating meaning (1987:575).

Each time a word or phrase is repeated, its meaning is altered. The audience reinterprets the meaning of the word or phrase in light of the accretion, juxtaposition, or expansion; thus it participates in making meaning of the utterance. (1987:576)

This participation of the audience in meaning-making facilitates the cognitive effect of comprehension by creating coherence (the link between structure and meaning) in the discourse.

Tannen claims four purposes for repetition, which are very similar to some of the purported uses of pronominal or classifier anaphora:

1. *Production.* The automaticity of repetition allows a speaker more efficient and more fluent production of language.
2. *Comprehension.* Repetition allows semantically/lexically less dense discourse with less new information.
3. *Connection.* Tannen, like Halliday and Hasan 1976, refers to the “referential and tying function” (1987:583) of repetition, its ability to link utterances and show relationships between concepts or referents. She also points to the evaluative use of repetition, allowing the speaker to point to what is important by focusing attention simultaneously on both the similarities and differences between instances of a repeated utterance.
4. *Interaction.* Repetition is a strategy for conversational management, e.g., for linking speakers’ and hearers’ ideas and for ratifying contributions. It acts to tie participants to the discourse and to each other.

This use of repetition as a cohesive device has been studied in a variety of languages and dialects (see Tannen 1987 for a summary of these studies). It is also well documented in English (e.g., Halliday and Hasan 1976, and discussed in Rosen and Behrens 1994, and Lunsford and Connors 1995). In Athabaskan, McCreedy’s (1989) study of cohesion in Navajo discourse examined such devices as pronominal reference and lexical repetition, synonymy, and collocation in three genres of Navajo texts. Gómez de García and Axelrod (1998) examined the use of repetition and its implications for curriculum building in the Mescalero, Chiricahua, and Plains Apache languages.

As is noted in Gómez de García and Axelrod (1998), the structure of Athabaskan languages may make repetition strategies especially available to speakers: “The structure of the verb lends itself to repetition and, because verb roots can be repeated with different prefixal derivations and prefixal derivations can be repeated with different verb roots, Apachean allows this repetition without excess redundancy. It is a strategy that provides cohesion within a text and also allows for increased learnability” (1998:123).

Repetition in Apache texts was found to account for between 30 and 40% of the verbs used. The use of repetition in Koyukon may be even more frequent. In a sample of conversation between Bessie Henry and Catherine Attla of Huslia (used here for examples (26) and (29)), there are a total of 59 verbs. Of these, 23 represent new instances and 33 are repetitions of one or another of those 23 previously introduced verb roots. Excluding the verb ‘to say’, of which there are twelve occurrences, there are 58 verbs; 22 of those, or 37%, are instances of repetition. In the popular Koyukon folktale *Tobaan Etseh*, as told by Catherine Attla (discussed in Axelrod 1993), there are a total of 108 verbs (excluding instances of ‘say’ in its reportative or evidential uses); fully 65, or 60%, of these contain repeated verb roots.⁵

Variation in aspectual marking is an important strategy for providing cohe-