SALIENT FEATURES OF MAKAH ZOOLOGICAL NOMENCLATURE

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1.0 INTRODUCTION

The Sapir–Whorf hypothesis, which posits the relationship between the cognitive systems and the language of a particular group, has been substantiated by numerous studies (e.g., Mathiot 1962; Whorf 1974; Leap 1977). As is true in other languages, Makah terms for objects, including animals, reflect classification principles native speakers use to judge reality. By exploiting this principle, Makah zoological nomenclature is revealed in a systematic fashion indicating the salient features operating in the Makah naming of animals. This approach indicates not only what the Makah call animals, but how the language represents animals within an environmental and utlization context.

Makah is the ancestral language of the Makah Indian Nation, a federally recognized Tribe of American Indians granted this status by virtue of the Treaty of Neah Bay signed in 1855. While the tribe is the sole representative of the Nootkan cultural group and the Wakashan language family in the United States, the name "Makah" is derived from the Salish word /maq̓a·/, meaning 'full, well-fed', which literally translates to generous people. The name refers to the custom of /wa·bit/, 'left-over food taken home by guests after a party or potlatch'. The Makah name for the Tribe is /qʷidiččaʔa·tx̌/, 'People of the Cape', a reference to the geographic location of tribal lands.

The present reservation is located on the most northwesterly piece of land in the lower forty-eight states, and includes Cape Flattery, the promentory referred to in the Makah's name for themselves. The Pacific Ocean bounds the reservation on the west, the Strait of Juan de Fuca is the northern boundary, and two arbitrary lines mark the southern and eastern limits of the reservation. Of the 811 Makah living on the reservation, only 21 are native speakers of the language.

2.0 THE MAKAH LANGUAGE

Since few data are available in published manuscripts, some basic data about the phonetic inventory, surface phonotactics, and morphological proscriptions and preferences will be presented.

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2.1 General Phonetics

There are 49 phonetic segments in Makah, 34 consonants, 10 vowels, and 5 vowel-semivowel combinations. Makah lacks voiced fricatives, phonetic and phonemic /r/, and has abundant variations of /k/ and /q/. Other consonants can be labialized and/or glottalized in morphophonemic processes. /m/ amd /n/ are rarely attested in any environment. Historical factors account for this phenomenon, as /m̓/ and /m/ in Westcoast and Nitinaht have become /b/ in Makah. The same is true for /n̓/ and /n/ in the two northern languages, which correspond to /d/ in Makah. And, unlike the two northern Nootkan languages, Makah contains no pharyngeals in the phonetic inventory.

Long vowels in Makah are orthographically differentiated from short vowels by the presence of a midline /·/. Phonetically this dot indicates a difference in both the quality and quantity of each Makah vowel, though speakers whose native language is English generally have great difficulty recognizing the quantity distinction.

2.2 Phonotactics: Syllable Structure

Makah, like most American Indian languages, relies heavily on intricate systems of surface level, cross-referencing morphology to convey meaning. Morphophonemic processes alter the surface structure drastically in certain environments, but all Makah constructions follow a number of rigid syllabic and combinatory rules:

1. No syllable may begin with a vowel.
2. No vowel clusters are attested anywhere in the language.
3. No consonant clusters may appear at the beginning of a syllable, while they are attested in other environments.
4. No contiguous /ʔ/ are permitted.

After these rules are observed, the resultant surface structure exhibits a preferred CV or CVC syllablic pattern which is common to the other Nootkan languages. Makah also appears to utilize stem extenders (Haas 1972), post-velar consonants which intensify the semantic intent of a stem. A CVC stem which changes to a CVCC stem possesses an intensified meaning in the latter form. For example:

/λit-/	'spread out'	/λitq-/	'explode'
/but-/	'cut'	/butq-/	'amputate'
/pit-/	'fit together'	/pitq-/	'jam together'
/sit-/	'split'	/sitx̌-/	'tear'
/q̓at-/	'heal'	/q̓atx̌-/	'shrink, shrivel'

2.3 Morphology

Like the other Nootkan languages, Makah utilizes suffixation as the primary morphological process; analysis has revealed no prefixes. Reduplication is also a fundamental morphological process, and plays a considerable role in the formation of the repetitive and iterative aspects, plurals, neologisms, and what the Makah call "looks like" terms, i.e., resemblance terms (Jacobsen nd; Gill and Renker 1984). Because categorization of Makah morphemes is both semantic and positional, it is quite easy for speakers to create new words both in daily conversation or when the need arises. Recently, for example, speakers decided to name the new Tribal computer /ƛ̓aƛ̓apaxʷityak/ 'thing that thinks' (Renker and Gill 1984).

3.0 METHODOLOGY

Because the spelling of Makah words on the three most complete lists of zoological terms (Swan 1870; Gunther 1936; Goss, Ides and Ides 1974) is not consistent, the first task in this investigation was transferring archaic spellings of Makah animal names into the standardized orthography used by the Makah Language Program and the Makah Cultural Research Center [MCRC] (Makah Language Program 1979). This orthography was standardized in 1978, and has been refined through daily use in the linguistic and cultural projects conducted by the MCRC. We have converted former orthographies to that used by MCRC for consistency and accuracy in this paper.

Speakers were also consulted as to the use and habits of animals on the reservation, as well as the terminology used when discussing animals. In many cases, there is no evidence available for the use of birds or certain other animals beyond that of Swan (1870) and Gunther (1936). Women are best acquainted with the names and uses of shellfish, while men are most knowledgable concerning sea and land mammals. This division of knowledge reflects traditional economic roles in Makah society. Both women and men are very knowledgable concerning fish, as the men generally catch the fish while the women process them. Very little can be remembered concerning the habits and uses of birds as a general category. To support this assertion, more bird terms are not recognized by present-day Makah speakers than in any other category. Most species of birds are now included within the life form term /huktu·p/.

The gradual merging of subdivisions within a category is evidenced by the terms for whales. Most species of whale, with the exception of the grey whale, the killer whale, and the finback, are now recognized by the life form term, /čita·puk/, rather than by the names recorded by Swan in 1870. This trend in Makah zoological nomenclature was first noted by Hildred Ides, a Makah speaker, in early 1985.

4.0 CURRENT STATUS OF MAKAH ETHNOBIOLOGICAL STUDIES

The earliest reports of Makah animal and plant names are to be found in the word lists of James G. Swan (1859–1864; 1870) and the limited text associated with these names. For example, Swan (1870) discusses the fact that certain animals and plants were used as food or were considered to be connected with certain natural or supernatural phenomena. These statements are spread throughout his diaries as well as his published monograph, the first ethnography of the Makah. The next available ethnobiological data are from a half century later, and include material in Curtis (1916), Waterman (1920), and Densmore (1939).

Gunther (1936) greatly expanded our ethnozoological knowledge of the Makah by conducting a detailed series of interviews with a Makah man regarding the names, habits and cultural association of the birds and mammals of Makah territory. In addition to providing the Makah names for some animals, Gunther presented some translations of these terms. She observed that certain Makah names present descriptions of salient biological or behavioral characteristics for a particular species, as well as information concerning the habitat of cetain animals. For example, a /ɬaɬaƛ̓ʷik/,[1] 'hawk', was translated as "anything that grabs with claws" (Gunther 1936:106), and Bonaparte's Gull, /ƛ̓a·ƛ̓a·ʔaya·tɬ/ (*Larus philadelphia*), means "anything living way out in the ocean" (Gunther 1936:109). An ethnobotanical study of western Washington (Gunther 1945) provided utilization and ethnolinguistic data for many of the plants used by the Makah. In 1974, Goss, Ides and Ides compiled a list of Makah plant and animal terms, but this paper was never published and is generally unavailable to researchers.

(1) "something that habitually grasps with claws"

While these studies provide much useful and irreplacable data concerning Makah ethnobiology, none of them singly or in combination provide comprehensive coverage of either Makah ethnobotany or ethnozoology. Gill (1983) integrated all previously published and known archival data on Makah ethnobotany and provided an extensive corpus of new data based on detailed research with the Makah people during 1979-1983, as well as analysis of archaeobotanical remains from the Ozette Village Site. Gill's study documented a connection between the linguistic forms of Makah botanical nomenclature and the economic importance of the plants to traditional culture as well as the indigenous *vs.* introduced status of plants. Makah plant names, like animal terms, often describe salient features of the plant, or indicate a culturally recognized use of the species. Gill and Renker (1984) supported these distinctions, and expanded on the linguisitic evidence supporting ethnobotanical features of plant nomenclature.

A morphological study of Makah biological terms is found in Renker and Gill (1984), which paid particular attention to the perceptual categories of shape and space as discriminators in the Makah biological lexicon. To illustrate, we can look at the Makah words for several biological entities:

1. ƛ̓iɬi·ʔaqλbap — 'Yew'

ƛ̓iɬ	-	i·	-	'aqλ	-	bap
red	-	epenthetic vowel	-	inside	-	plant species

2. ƛ̓iɬi·b — 'Woodpecker'

ƛ̓iɬ	-	i·	-	ba
red	-	epenthetic vowel	-	thing

3. ƛ̓iƛ̓i·ɬi·yił — 'White-crested cormorant'

ƛ̓i	-	ƛ̓i·ɬ	-	i·	-	yił
reduplication	-	red	-	epenthetic vowel	-	throat location

4. ƛ̓iƛ̓iɬsaʔał — 'Giant chiton'

ƛ̓i	-	ƛ̓iɬ	-	saʔ	-	'ał
reduplication	-	red	-		-	on the surface of

5. ƛ̓iɬa·piɬ — 'Red snapper'

ƛ̓iɬ	-	(a·)piɬ
red	-	spherical distribution marker

Notice that in examples 1 - 5 the salient characteristic featured in each name is the color red. The location or distribution of the color is the discriminating factor in the respective terms, and the well-developed category of Makah locatives is the marker of these distinctions.

This paper presents a morphological and biological inverstigation of the corpus of Makah zoological nomenclature, which features the terms used for birds, mammals, fish, and shellfish. Comparative and contrastive terms from the botanical corpus will be used when needed.

5.0 MAKAH ZOOLOGICAL TAXONOMY

Berlin, Breedlove and Raven (1974) have identified six taxonomic levels, which they term "taxonomic ethnobiological categories", that appear to be universal in all languages. They are, in descending

order, Unique Beginner, Major Life Form, Intermediate Taxa, Generic Taxa, Specific Taxa, and Varietal Taxa. Readers desiring more information on this topic are referred to Berlin, Breedlove and Raven (1968; 1974) and Turner (1974).

Makah zoological taxonomy is not as well understood as that for plants, but a tentative framework may be suggested based on available data. Makah contains no independent term inclusive of all animals, nor is there any affix that carries this meaning. This contrasts with Makah botanical classification, where the affix /-bap/ is used in many of the names for terrestial vascular plants (Gill and Renker 1984).

Makah apparently recognizes seven major zoological life form categories. These are:

1.	λ̓icux^{w}adi·	'people'	
2.	ha?ub	'eating thing'	[marine animals (except whales)]
3.	č̓ita·puk	'whale'	
4.	x̌iktu·p	'crawling thing'	[animals, specifically land animals]
5.	huktu·p	'flying thing'	[birds]
6.	ła·px̌saqtap	'flapping thing'	[flying insects]
7.	č̓ix̌^{w}a·	'annoying, disgusting'	[biting insects, demons, etc.]

/ha?ub/ is the Makah name for food. As a zoological category it includes fish, porpoises, dolphins, seals, and shellfish, but not whales. /č̓ita·puk/ includes whales and killer whales. /x̌iktu·p/ includes land mammals (excluding people), reptiles, terrestial amphibians, spiders, beetles, and sometimes bats. Bats may be either a /x̌iktu·p/ or /huktu·p/, depending on the situation. Makah mythology explains this ambiguous classification. /huktu·p/ includes birds, certain mythological creatures such as the thunderbird, and sometimes bats. /ła·px̌saqtap/ includes flying insects. This category is somewhat ambiguous with /č̓ix̌^{w}a·/, for example, flies and butterflies may be included in either, depending on the perception of the speaker. Butterflies are sometimes included as a /č̓ix̌^{w}a·/ because they start out life as a caterpiller. /č̓ix̌^{w}a·/ includes biting insects such as lice, fleas, and mosquitos; flies; caterpillers; worms; slugs; and demons, monsters, and spooks. Interestingly, it is also a women's term for little boys' penises.

The intricacies of lower level taxa are not completely worked out at this time, but it is obvious that the vast majority of Makah animal terms reside in the category of generic taxa. Generally these terms are equivalent to zoological families or genera in the case of economically unimportant Makah generic taxa, or to zoological species in the case of important animals. At present, no specific or varietal level taxa are known for Makah.

6.0 MAKAH ZOOLOGICAL NOMENCLATURE

Certain patterns in the zoological corpus are immediately evident. One of the easily visible linguistic patterns in anmimal terminology is the iterative formation. As the name implies, this feature will be a behavioral trait which occurs often, but not at regular intervals or continuously. In Makah, the iterative formation typically lengthens the stem vowels. Consider the following examples:

6. tu·ktu·kš — 'Mole'

tuk	-	tuk	-	š
reduplication	-	bury	-	iterative marker

7. łuthu·tš — 'Thunderbird'

łut	-	łut	-	š
reduplication	-	spreading wings	-	iterative marker

8. λa·šλa·š — 'Lizard'

λaš	-	λaš	-	š	
reduplication	-	stiff	-	iterative marker	(refers to stiffening of dorsal appendages)

9. k̓^{w}iti·k̓^{w}itš — 'Hummingbird'

k̓^{w}it	-	i·	-	k̓^{w}it	-	š
reduplication	-	epenthetic vowel	-	stick	-	iterative marker

(refers to habit of "sticking to a flower to get food")

10. ć̓uć̓ubaqš — 'Loon'

ć̓u	-	ć̓u	-	baq	-	š
reduplication	-	diving	-		-	iterative marker

11. q̓^{w}aq̓^{w}alabaqš — 'Osprey'

q̓^{w}a	-	q̓^{w}alabaq	-	š
reduplication	-	wild looking	-	iterative

Another formation which must be noted is the -k̓uk$^{(w)}$ construction. When accompanied by an initial reduplication of the first CV- sequence, this morphemic arrangement translates as 'looks like' or 'resembles' in English. Very common in Makah botanical nomenclature, there are only three examples among animal terms currently known from Makah:

12. pipi·šk̓uk — 'Bobcat'

pi	-	pi·š	-	k̓uk
reduplication	-	cat	-	resemblance marker

13. č̓ač̓aq̓atk̓uk — 'Blackbird'

č̓a	-	č̓aq̓at	-	k	-	k̓uk
reduplication	-	crow	-	intensifier	-	resemblance marker

14. dadax̌t̓ač̓uk — 'Teal'

da	-	dax̌t̓ač̓	-	k̓uk
reduplication	-	mallard duck	-	resemblance marker

This category is curious when contrasted with the same type of names in the botanical corpus. While the construction usually indicates recently introduced or secondarily used species when applied to plants, the same pattern apparently does not occur in zoological nomenclature. Bobcats, for example, are native to the Cape Flattery area, and biologists believe that they were much more numerous in the past than today. Why then, are the animals said to resemble domestic cats /pišpi·š/, which were only recently introduced into the area, rather than the other way around? One hypothesis is that the original Makah word for bobcat has been eliminated from the available words in the language, and that a "new" word for bobcat emerged from the feline relationship to the domestic cat, which is now more numerous than the bobcat.

Evidence for this hypothesis is also found in example 14. Gunther (1936) reports the word for teal as /ci·ʔe·č/, a word Makah speakers do not recognize today. Instead, the word /dadaxt̓ačk̓uk/ "looks like mallard" is now the accepted name for teal.

Another obvious category are those terms with the morpheme /-(t)u·p/ in the ultimate position. Literally translated as "thing for..." or "thing that...", the category calls attention to a characteristic of the biological unit in question. It is interesting to note that two life form names fall into this category.

15. huktu·p 'Bird'
huk - tu·p
airborne - thing that

16. x̌iktu·p 'animal'
x̌ik - tu·p
crawl - thing that

17. tiɬu·p 'Octopus'
tiɬ - u·p
bait - thing for

18. č̓i·daxtu·p 'Black chiton'
č̓i·d - ax̌ - tu·p
low tide - location - thing that

The category marked by /-ba/ or /-da/ also indicates attributes which are related to a 'thing'. (The /-a/ drops in a word final environment.)

19. kawad 'Killer whale'
ka - wad - da
thing sticking up - middle - thing (refers to the dorsal fin)

20. ʔakwati·d 'Bald eagle'
ʔakwat - i· - da
ready to retaliate - epenthetic vowel - thing
(*cf.* ʔakwatši‍ƛ - 'to retaliate')

21. č̓ucu·b 'Mountain goat'
č̓uc - u· - ba
twist - epenthetic - thing (refers to the goat's horns)

Morphemically, example 2 belongs in this category as well.

The structural category with the most members consists of terms which contain particles specifying the location of a feature on the body. Another locative group indicates the habitat preference of a zoological taxon or a location where an individual of that taxon is likely to be seen. Examples 22 - 27 belong to the first category, 28 - 31 illustrate the second.

22. ƛ̓iƛ̓i·x̌saʔaɬ 'Giant chiton'
ƛ̓i - ƛ̓i·x̌ - sa - 'aɬ
reduplication - red - - on the back of

23. k̓ʷak̓ʷaqƛi· 'Porpoise'
k̓ʷa - k̓ʷa - aqƛi·
reduplication - broken - on the tail

24. sixʷa·wix̌ 'Grey whale'
sixʷ - (a·)wix̌
sores - on the face

25. kacqi· 'Sperm whale'
kac - qi·
prominant protrusion - on the top of

26. wa·wa·q̓itapuɬ 'Scaup duck'
wa· - wa·q̓it - (a)puɬ
reduplication - frog - in the face (refers to feeding habits)

27. k̓ʷička·pix̌ 'Small sea urchin'
k̓ʷič - k - a· - (a)pix̌
spear or prick - intensifier - continuous marker - spherical distribution marker

28. k̓učka·pix̌ 'Purple sea urchin'
k̓uč - k - a· - (a)pix̌
action of hooking - intensifier - continuous marker - spherical distribution marker

29. cacakis 'razor clam'
ca - cak - is
reduplication - upside down - in the sand

30. yačaʔa· 'Dogfish'
yač - aʔa·
flopping about - on the rocks (This word is also used to describe a child who is throwing a tantrum on the floor).

31. ɬuɬu·beyis 'Flounder'
ɬu - ɬu· - bey - is
reduplication - pertaining to a board - moving about - in the sand

32. q̓ʷiti·da·bac 'Slug'
q̓ʷit - i· - da - (a·)bac
suck - epenthetic vowel - thing - in the mud, sand, ground

Note that the corpus containing natural habitat locatives consists only of terms for fish, shellfish, and a relatively easy to catch bird.

Other animal names cannot be grouped into linguistically structured categories, but a morphemic analysis of the words indicates that these terms are descriptive of an action, a sound, or a cultural association by the Makah people.

33. hubu·ha·bi· 'Moon snail'
To the Makah, the ocean makes a noise /hu·b-hu·b/.
(*cf.* /huhu·bʔad/ "sounds like the ocean")

34. weʔičbis 'Moth'
weʔič - bis
sleep - collectivity of (refers to the Makah belief that moths bring sleep, much in the way certain Americans speak of a Sandman)

35. λ̓aλ̓abaxpič 'Red-headed woodpecker'
λ̓a - λ̓abax - pič
reduplication - drawing back a sling - on a hard surface

36. λ̓i·ʔuqʷati· 'Scallop'
λ̓i· - ʔu· - qadi·
loud noise - - sounds like (refers to use of these shells for rattles)

37. č̓i·ɬseyap 'Screech owl'
č̓i·ɬ - sey - ap
run away - conditional - causative
(refers to the Makah belief that owls are harbringers of death or the returned souls of the drowned [Gunther 1936; Swan 1870])

38. susu·yaqiɬ 'Spider'
su - su·yaq - qiɬ
reduplication - net - habitually a maker of

The last category of zoological names presented are for animals which are recent additions to Makah territory. By far, the predominant pattern in this group is simple reduplication.

39. pišpi·š 'Cat'
40. bu·sbu·s 'Cow', 'bull'
41. ʔaha·ha· 'Chicken'

Animals not used frequently or not naturally occurring in Makah territory can have borrowed names as well. This fact is indicated by the presence of /m/ and/or /n/ in the term. In Makah, there is no /m/ nor /n/; these sounds have become /b/ and /d/, respectively.

42. mama·qʷaʔa· 'Bullhead' (Notice the locative /-aʔa·/ 'on the rocks')

43. na·ni· 'Grizzly bear' (not found in Makah territory)

The name for domestic sheep has been adapted from Chinook Jargon by the process of altering /m/ to /b/ as well.

44. libi·tu· 'Domestic sheep'
(French /la mouton/ ⇒ Chinook /la mu·tu·/ ⇒ Makah /libi·tu·/)

7.0 CONCLUSIONS

Makah zoological nomenclature can be categorized based on two different principles: (1) linguistic structure of the term or (2) the contextual or behavioral information which surrounds those terms not falling into a category defined by a recurrent linguistic structure or morpheme category. In both cases, a salient feature of the animal is isolated and described, but the feature is most likely to be a Makah cultural association if the term falls into the last category.

It is profitable now to contrast and compare the zoological corpus and the botanical one. The immediate difference is the lack, in zoological nomenclature, of a suffix indicating that a biological unit is an animal. The suffix /-bap/ is found throughout the botanical corpus, and indicates that an item is a plant of some kind. In fact, the life form terms for bird (example 15) and animal (example 16) fall into one morphemic grouping, as do some generic terms.

The zoological terms exhibit the iterative construction which, with one exception, is completely absent in botanical nomenclature. This fact makes a great deal of sense when one considers the basic contrast between plants and animals: plants are generally immobile and animals usually can exhibit numerous patterns of actions. Essentially, plants can be named for either their physical attributes or the manner in which the plant is used. Plants, like animals, are also given habitat related names.

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