Coyote and the prickly pear | An etiology of ethnobotany among the Hualapai

John T. Rowan

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Coyote and the Prickly Pear:
An Etiology of Ethnobotany Among the Hualapai

by
John T Rowan
B.A. The University of Arizona, 1989
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for the degree of
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The use of four non-domesticated plants (mescal agave, prickly pear cactus, banana yucca, and pinyon pine) among the Hualapai people of northwestern Arizona forms the basis of this analysis. Past theoretical models of cultural development in the region are dominated by excessive classification and nomothetic proclamations. These models hinder a full integration of material evidence and oral tradition in forging a holistic understanding of Hualapai ethnobotany and culture. The following study applies evidence from the archaeological and ethnohistorical records of northwestern Arizona in a critical assessment of the interaction between ideological and physical reasons why these four plants became so important to the Hualapai. A mediation of emic and etic perspectives is achieved through a dialectical approach emphasizing the importance of historical context, and utilizing the concepts of landscape and heterarchy. The unifying element throughout this analysis is the recognition of a Hualapai self-identity that has persisted throughout dramatic social and environmental transformations and is fundamental to their continued recognition as a distinct people.
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Acknowledgments

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I wish to express my appreciation, first and foremost, to the Hualapai people for their support and participation in past anthropological study. Without their openness, generosity, and permission the present study could not have been conducted. In particular, I am deeply indebted to Lucille Watahomigie for her scholarship and professional comments. The members of my thesis committee were generous in their support and insightful in their critiques. They include Gregory R. Campbell (chair), Susan D. deFrance, Jeffrey A. Gritzner, and Thomas A. Foor.

I wish, also, to thank others for their personal support and/or professional advice. They include Lorraine Boehm (my wife), Michael Winkelman and John F. Martin (Arizona State University), Peter J. Mehringer, Jr. (Washington State University), John E. Douglas and James Welch (University of Montana), and Joseph and Marion Rowan (my parents).
Figure 0.1 Regional View of Pre-contact Hualapai Lands

Modified from Stone 1987:36
INTRODUCTION

The Hualapai1 (from h wahl “pine tree” and a paa “people”) are a Native American tribe of northwestern Arizona. The Hualapai language is linguistically classified within the Yuman family and subcategorized as Upland Yuman. Upland Yuman includes the Hualapai, the Havasupai of the Grand Canyon, and the Yavapai of central and western Arizona. The Hualapai and Havasupai exhibit particularly strong interrelationships and some researchers have referred to them jointly as the Pai tribes (Euler 1958; Dobyns and Euler 1967 and 1970; Smith 1970; Martin 1973). The consensus of ethnographic analysis classifies Hualapai pre-contact subsistence practices as gatherer-hunter, analogous to the pattern of Great Basin groups. The range of Hualapai occupation prior to Anglo settlement included approximately 5 million acres and diverse vegetational resources. It was bounded by the Colorado River on the north; Cataract Canyon to the east; the Santa Maria and Bill Williams Rivers to the south; and the mountains bordering the Colorado River to the west (Euler 1958:1). Today, the Hualapai Reservation consists of 900,000 acres in northwest Arizona and is centered around the community of Peach Springs on the western edge of the Colorado Plateau (see Figure 1.1).

Though the Hualapai people utilized a diverse range of subsistence choices prior to Anglo settlement, this study of their ethnobotanical practices concentrates on four particular plant resources: mescal agave (Agave spp.), prickly pear fruits (Opuntia spp.), banana yucca fruit (Yucca baccata), and piñon nuts (Pinus edulis) [see Figures 1.2 - 1.5]. I endeavor to explain why these four plants, as opposed to the other subsistence resources in northwestern Arizona, became so indelibly intertwined with Hualapai cultural practice. These resources are well documented in the ethnographic record and are a locus of recent efforts by members of the community to teach and sustain a Hualapai way of life among

1 Sometimes spelled Walapai. However, the tribal council uses Hualapai and the gathering consensus among ethnohistorians reflects the choice of the council. The term h wahl a paa was only used to refer to the pre-contact band living west of the Hualapai Mountains until Garcés recorded the name in his journal and it became associated to the whole tribe (Euler 1958:46).
future generations.

Anthropological research was relatively limited in northwestern Arizona prior to 1950. Other than salvage archaeological projects along the Colorado River and limited surveys in the Prescott and Wickenburg areas, the pre-contact Hualapai territory was largely an enigma. The first extensive cultural data were collected by a group of five graduate students in 1929, under the off-site supervision of Alfred L. Kroeber (1935). They conducted eight weeks of ethnographic fieldwork among the Hualapai. Tribal land claim litigation during the 1950s spurred extensive research in the region. Robert Manners (1974), collected evidence for the federal defense against the tribe’s land claim. Henry Dobyns (1957a, 1957b, 1957c, 1974) and Robert Euler (1958) conducted seminal
ethnographic and archaeological field research on behalf of the Hualapai claim. Albert Schroeder (1957), Douglas Schwartz (1955), Werner Winter (1957), Allan Coult (1961), and Carma Lee Smithson (1959) also carried out extensive field studies. Since the 1950s, anthropological research in the region has been less intense and continues to rely heavily upon the period’s published field work. Most published investigations from the
region are overly reliant on nomothetic models\(^2\) and classificatory systems\(^3\) that fail to recognize Hualapai views on their own culture. Tribal oral traditions are often included with analyses; however these traditions are usually offered as an aside to the explanatory models developed by social scientists. An explicit aim of the present analysis is to accentuate the oral tradition and practices of the Hualapai people in the study of their culture.\(^4\)

**Toward a Dialectical Approach**

The relationship between a human society and the local environment is a critical element of anthropological study. Researchers continue to record, theorize, and debate the fundamental reality of human ecological relationships. The product of this endeavor is a theoretical spectrum; defined at the extremes by humanist social construction at one end and deterministic materialism at the other. Most of the published studies regarding northwestern Arizona avoid these theoretical extremes; but distinctly lean toward the deterministic end of the spectrum. The following study of Hualapai ethnobotany endeavors to challenge those conclusions while avoiding a simple backlash against them. To accomplish this goal, I present an integrated exploration of oral tradition, environmental data, and cultural practice as a basis to transcend deterministic perceptions of human ecological practice in northwestern Arizona.

A careful path must be constructed when attempting to address the interrelationships between humans and the environment. Because the lexicon in human-environment debates is implemented by adherents of diverse theoretical perspectives and spans significant time depth; the context of critical terms can slip in turns. To address

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\(^2\) An explanation that attempts to derive general rules or propositions that will hold true for all or most societies rather than just one culture group.

\(^3\) One standard practice in anthropology is to establish a standard system of reference (typology) for cultural practices and artifacts found within a geographic region. A typology allows researchers, through time and at different locations, to use a common language in identifying practices and artifacts according to structure, function, and chronology. Typologies currently used in the American Southwest are useful and necessary, but must be applied as a way to facilitate questions rather than the means to establish conclusions.

\(^4\) I respectfully acknowledge that the Hualapai people are the foremost authorities on their own language, traditions, and subsistence practices. This study is offered as a synthesis of anthropological theory, material evidence, and published Hualapai perspectives. It is not presented as a definitive explanation, nor is it a nomothetic model.
these complications, I will define the critical terminology as it is used in the text. I do not attempt to review the full history of these terms - only their definition relevant to this study.

**Etic and Emic**

Kenneth Pike (1967) introduced the use of the terms etic and emic into anthropological study. He created a direct analogy from the linguistic terms *phonetic* and *phonemic* to the study of human behavior. *Phonetic* refers to the observable properties of a distinct speech sound (place and manner of articulation). According to Pike, the descriptive notes and trait lists social scientists collect from the observation of cultural practices constitute *etic* analysis. *Phonemic* refers to the cognitive structures by which members of a speech community draw associations between speech sounds and their significance - how native speakers make sense of sound strings. Thus, *emic* analysis of cultural practice privileges the “native” consultant’s perspective on reality and meaning. Marvin Harris (1979:32) states, “the test of adequacy of emic analyses is their ability to generate statements the native accepts as real, meaningful, or appropriate. In carrying out research in the emic mode, the observer attempts to acquire a knowledge of categories and rules one must know in order to think and act as a native”.

**Ecology**

Karl Butzer (1982:6) defines *ecology* as the study of the interrelationships between human communities and their environments. The present study emphasizes the interaction between the physical world surrounding a human community and the cultural context, particularly ideology, shared by its members. The physical realm is defined by the elements of space, topography, atmospheric patterns, and resources - biotic and mineral - within a region. The ideological realm of a society consists of shared symbolic references or cognitive patterns through which meaning is drawn from the physical realm.

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5 Pike and Harris disagree on the applicability of etic analysis in cultural studies. Pike argues that etic analysis is incapable of addressing the meaningful structure underlying cultural practices because it is limited to the observer’s description of actions. Harris asserts that etic analysis is better suited to address underlying structure because it accentuates objective observation and the potential to scientifically test the observer’s conclusions. I disagree with both authors. Etic and emic analyses are each valid means of discerning meaning and structure within cultural practices. The two perspectives should be integrated in order to identify correlations and incongruencies, which generates further study.
and value is placed upon it. The interaction between physical and ideological realms is evidenced through patterns of subsistence, settlement, and exchange. This interaction creates a material record known as a landscape.

Landscape

*Landscape* is the material manifestations of the interaction between human groups and their physical surroundings (Crumley 1994:6). Landscape, as a conceptual framework, focuses on the interrelatedness of humans and their environment - how each impinges on the other - rather than seek a unilinear cause-effect explanation. Landscape is more than just the physical environment and material culture of society, it is equally a manifestation of the community's ideological structure. The evidence of past landscapes may not be in the obvious form of large structures or dense artifact scatters, thus a multi-disciplinary approach is most effective. Additionally, the landscape record of a geographic region may exhibit evidence of long term stability in environmental factors and cultural practice, followed by periods of rapid and dramatic change. A succession of landscapes occurs over time because both the physical and cultural realms of an ecological system are dynamic. Ecological dynamics should not be confused with reformation. Too often analysts are eager to attribute evidence for ecological transformation as proof of abandonment by one culture group and resettlement by another (see Colton 1945; Schroeder 1960; Euler 1962; and Manners 1974). The landscape framework can be implemented just as effectively into an investigation of cultural continuity, with a focus on ecological reconstruction rather than demographic reformation.

Heterarchy

*Heterarchy* is a "complex system in which elements have the potential of being unranked (relative to other elements) or ranked in a number of ways." (Crumley 1994:12). Heterarchy is defined in distinction to hierarchy. A hierarchy is a conceptual framework super-imposed upon reality to aid in identification of elements and relationships between the elements. Hierarchical systems can provide useful insights into anthropological study; but become useless, even detrimental, to meaningful analysis when the taxonomy of the systems begin to dictate the observer's perception of reality.
The concept of heterarchy recognizes systems within reality; multiple sub-systems and differing levels within those entities (i.e. regional climate/local geologic formations, regional trade/local social structure, regional vegetation/local subsistence); yet specifically renounces directional ranking within a system. The reality of an ecological system is that any element can have equal impact upon the overall system, regardless of the scale/level at which it exists.

**Dialectical Approach**

Alice Ingerson states in a critical evaluation of the popular perception in Western society of a dichotomy between nature and culture, "... we may gradually stop posing questions about the hierarchy of causality between nature and culture, and begin to pose questions about heterarchies that are both and neither natural nor cultural as we now understand those terms" (Ingerson 1994:65). This statement reflects one of the tenants of the *dialectical approach*, ecology is a heterarchial dynamic through which the physical and ideological realms interact and change through time. Ingerson points out that, in the Western tradition, scientists have too often sought to explicate the unchanging patterns of natural processes; and have either discounted the applicability of scientific method to the study of human systems or have fully subsumed cultural studies within the perceived cyclic patterns of nature. The dialectical approach is an alternative path of analysis that breaks down the dichotomy between the physical and ideological realms; as well as the dichotomy between emic and etic perspectives for extracting meaning and significance.

A second tenant of the dialectical approach is the inseparableness of historical context from the heterarchial dynamic. Randall McGuire and Dean Saitta (1996:198-199) describe dialectics as "both a world view and a method of inquiry" by which "the *lived experience* of past peoples" is emphasized (author's emphasis). McGuire and Saitta's definition of "lived experience" acknowledges the co-influence of individual creativity and environmental potential in the formation, and continual reformation, of cultural reality. The dialectic addresses the means through which the physical and ideological realms are defined *by* each other, rather than separate from each other. Ian Hodder
The oppositions set up within anthropology between subjective and objective, idealist and materialist, are not helpful because it is through the actions of individuals that cultural forms find articulation. ... The notion of social action involves a unity of meaning and experience, subject and object, interpretation and observation. (Hodder 1985:4)

At the foundation of the dialectical perspective is a recognition that: a) it is a fallacy to conceive of nature as undisturbed by, or fundamentally separate from, human interaction; b) the processes of nature are observable, moderately predictable, but ultimately infinite in possibilities; and c) human cultures are relatively patterned (ideological structures), unified by the recognition of a shared past, resistant to extinction, and also unlimited in possibilities.

**Methodology**

A dialectical approach is achieved by collecting data from the physical and ideological realms as independent paths of study. Establishing independent lines allows the researcher to avoid ascribing primacy to one realm and dependency to the other. As these independent paths are developed, the researcher can move back and forth from one line to the other in order to identify ambiguities between the two. These ambiguities form the basis of new questions and generate further study. This methodology entails two strengths over approaches that assign dependency, whether explicitly or implicitly, to one of the paths: a) ambiguities between the two lines are accentuated in order to provide direction for continuing research, rather than being considered exceptions to be discarded from the analysis; b) the dynamic relationship between the independent paths recognizes the equal importance of both the ideological and physical realms without establishing a false dichotomy between them.

**Conclusion**

In the following chapter, I present a review of the major anthropological research conducted in northwestern Arizona. The review includes Havasupai research with that of the Hualapai due to their close cultural relationship and is organized by chronology of
fieldwork. Broad themes in the research are identified and critiques presented. Chapter three is a concise reconstruction of Hualapai ethnohistory (pre-contact to present) in light of the research discussed in chapter two. Chapter four is developed in three parts: a) the physical realm; b) the ideological realm; and c) a dialectic synthesis of the evidence.

The word “etiology” in the title of this work is a deliberate choice; intended to set a goal of elevating the discussion of Hualapai culture, and particularly ethnobotany, into a new realm that transcends deterministic normative models and finite particularistic descriptions. Through the process of dialectical analysis ambiguities will be identified, new questions asked, and more holistic insights achieved.
Classificatory Muddle: 1
A History of Anthropological Research in the Region

Anthropological research in northwestern Arizona is sparse. Most professional and academic inquiries into Hualapai culture have relied on Walapai Ethnography (Kroeber 1935) - an ethnographic field study conducted by five graduate students and edited by Alfred Kroeber - and the publications of Henry Dobyns and Robert Euler based on their field research during the 1950s (Dobyns 1957a, 1957b, 1957c; Euler 1958). Archaeological surveys prior to Dobyns and Euler were focused on pre-contact ceramics and the investigators were reluctant to ascribe a direct relationship to any tribes of the historic period. In order to better understand the motivation behind the present study of Hualapai ethnobotany, a more detailed account of the history of research in the region is necessary.

1776 to 1920

The period from early Spanish contact until 1920 provided very little information to the world outside of northwestern Arizona about the cultures of the Upland Yumans. There is cursory evidence for Spanish contact with the Hualapai and Havasupai before 1776 recorded in missionary journals; however descriptive material is scant and translated publications were most often not available until the land claims research of the 1950s (Euler 1958). Fray Francisco Garcés recorded the first detailed account of European contact with the Pai tribes, though his diary was not widely available until Elliot Coues translated and edited the volume for publication in 1900 (Coues 1900).

The first formal ethnographic information on the Pai tribes was a 32 page article describing a visit to the Havasupai published by Frank H. Cushing for Atlantic Monthly in 1882. Cushing wrote for a literary rather than academic audience, which is evident in his rather fanciful account of the journey to the Grand Canyon and his tendency to poeticize descriptions of the people and their lifeways. However, Cushing recorded some informative details of Havasupai social organization and subsistence.2 Henry P. Ewing

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1 From Schwartz 1959:1068.
2 Cushing (1882) also recorded a significant origin tradition.
was a government agent to the Pai tribes from 1895 to 1903 and prepared two manuscripts (Ewing 1960, 1961) on Pai culture and prehistory. Neither manuscript was published during his life time. The autobiography of Flora Iliff (1985), a school teacher on the Pai reservations at the turn of the century also records some details of contemporary lifeways. Aleš Hrdlička (1908) conducted a survey of subsistence and medicinal practices in the southwestern United States during the early 1900s and recorded significant data regarding Hualapai health and subsistence.

1920 through the 1940s

The growth of anthropology as a profession after the turn of the century generated a great amount of field work in the American Southwest. While seminal publications were being produced regarding the Hopi, the Pueblos, and the Navajo, less assuming ethnography was conducted by Leslie Spier (1924, 1928) among the Havasupai and a group of graduate students supervised by Alfred Kroeber (1935) with the Hualapai. Both Spier and Kroeber were students of Franz Boas from Columbia University and shared the Boasian drive to record as much descriptive information about Native cultures as possible. Spier and Kroeber’s publications are valuable resources for the breadth and depth of data recorded. Boasian research was largely motivated by the conclusion that Native American societies were dying and the primary role of anthropologists was to record information from these cultures before they disappeared.

Fred Kniffen, Gordon MacGregor, Robert McKennan, Scudder Mekeel, and Maurice Mook recorded valuable information regarding the subsistence practices, material culture, religious customs, social organization, and oral traditions of the Hualapai from the consultants they interviewed. Much of the material culture and subsistence data they recorded are consistent with descriptions recorded by Spanish missionaries and U.S. Army reports. This congruency in the data over two hundred years of dramatic changes in northwestern Arizona evidences stability in Hualapai practices and supports it's use as an insight into pre-contact culture. However, there are limits to

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3 Both manuscripts were eventually edited and published by Henry Dobyns and Robert Euler.
4 Robert Euler prepared Ms. Iliff’s completed manuscript for publication.
the applicability of the data that was recorded. The team of ethnographers focused their endeavors on interviews to gain information on ancient practices while they recorded few details about contemporary life. This may be a direct reflection of their perception that Native American cultures were disappearing and, thus, contemporary practices were insignificant. More attention to lifeways of the 1930s would have been just as valuable information in understanding the full context of Hualapai culture, for the investigators of that time as well as modern researchers.

In addition, Kroeber’s editing of the field reports exhibits some biases. As a former student of Boas, Kroeber was well aware of the professor’s admonition to concentrate on data collection and avoid making broad generalizations regarding cultural processes or particular societies. Much of Kroeber’s work reflects an agreement with this principle, however he did not always refrain from drawing conclusions from limited data. As an example, he introduced the mythology section of *Walapai Ethnography* with the following statement:

> The Walapai are certainly not skillful story-tellers, even after allowance for the imperfections of their English and our rendering. Their motives are crude and trivial; they do not consistently build up a character - except the essentially inconsistent Coyote; they do not always hold consistently to the hero even within one tale; and they do not seem to feel, or at any rate are unable to express, well marked sympathy or identification with the personages, or to attach much emotion to them or their fate. They do like incident, irrespective of its inner connection with the plot; magic and trickery; and obscenity, sexual or otherwise.  
> (Kroeber 1935:245)

It seems unfathomable, today, that Kroeber would make such statements if he believed that the descendants of the Hualapai consultants would still be around and able to read his characterization. What is particularly troublesome about these comments is that his conclusions are based upon data collected by others, during a time of year that

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5 Kroeber never had personal contact with any of the Hualapai consultants, nor even traveled to northwestern Arizona. Further, the statement, “even after allowance for the imperfections of their English and our rendering,” (Kroeber 1935:245) cannot be fully evaluated since the editor provided short biographies of only four of the nineteen consultants and no details regarding the context of narrative collection and translation. “Our rendering,” may have significantly altered the texts.
had been traditionally off-limits for storytelling. Though the practice of editing student-collected ethnographic data was common in the 1920s and 30s, Kroeber's lack of personal involvement with the Hualapai people and landscape colored his assessment of an entire people. Further, Kroeber chose to publish the texts in English only. This is likely due to a combination of his perception of the reading audience and his lack of respect for Hualapai story-telling skills. However, Spier's publication of two Havasupai texts in transcription with an English translation (Spier 1924) is evidence that it was not unusual at the time to publish Pai stories in both languages. Kroeber may have felt the Hualapai texts did not merit full analysis or, at best, would not generate a deeper understanding of Pai culture.

Contemporary to Spier and Kroeber's ethnographic work, the first significant archaeological investigations in northwestern Arizona were initiated. The Gila Pueblo Foundation (GPF) conducted cursory surveys in the Prescott and Wickenburg areas during the 1920s and early 30s. The GPF under the direction of Harold and Winifred Gladwin were most interested in determining the boundaries of Hohokam and Sinagua settlements. Malcolm Rogers from the San Diego Museum of Man also pursued some superficial surveys into the area as part of his attempts to define the boundaries of California Yuman culture traits. Though neither the Gladwins or Rogers engaged in extensive recovery of archaeological remains from the region, their identification of ceramic patterns that were distinct from those of the Hohokam and California groups did spur others to investigate the area during the late 1930s, 40s and 50s (Colton 1945; Schroeder 1957, 1960). The Gladwins established the classification system for Southwestern archaeology that is still generally followed to this day and has framed much of the subsequent debate.

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6 Smithson and Euler 1964:32: "The Havasupai told these stories only during long winter evenings. If they were related during other seasons of the year it was believed that black widow spiders or snakes would bite the teller." The close relationship between Hualapai and Havasupai practices was earlier established - page 1, this volume.

7 It is quite likely that Kroeber's intense interest in Yurok mythology and familiarity with the elaborate oral traditions recorded among the Zuni (Ruth Benedict), the Navajo (Galdys Reichard), and the Taos and Tewa Pueblos (Elsie Parsons) may have also influenced his perceptions of Hualapai story-telling.

8 The Gladwins proposed a classification system in which the most basic inclusive category for pre-contact materials is termed the "root"; major geographic divisions within the root are "stems", which incorporate
The 1930s also involved a great deal of salvage archaeology along the Colorado River due to the construction of Boulder Dam that created Lake Mead. Civil Conservation Corps workers excavated sites along Willow Beach and at Muav Cave with the rising lake literally at their heels (Stone 1987:41). Connie L. Stone describes these hurried and poorly documented projects, along with a few more conducted in the 1940s above Davis Dam, as “one of the tragedies of Southwestern archaeology.” (Stone 1987:41). Harold Colton and Lyndon Hargrave of the Museum of Northern Arizona supervised extensive surveys through the area in preparation for a new Santa Fe railroad route. Colton and Hargrave never published any of the data they collected; however Colton did publish an article in 1945 challenging the Gladwin classification of the “Yuman” root for northwestern Arizona. His primary argument was that it was premature to assume a direct cultural connection between the Yuman speaking inhabitants of the historic period with the cultures that produced pre-contact materials. He proposed the term Patayan\(^9\) as a reasonable alternative to avoid these assumptions (Colton 1945:119). Colton’s suggestion has become common practice in Southwestern research.

The 1950s

Anthropological endeavors in northwestern Arizona blossomed during the 1950s. Albert Schroeder (1961) reopened excavations at Willow Beach in 1950 and lead an extensive survey of the Colorado River from Davis Dam to the Mexican border in 1952. James Redden began his studies of Hualapai phonology and morphology. Werner Winter (1957, 1966), a German linguist, initiated two field sessions with a female Hualapai consultant to collect narratives and morpho-phonemic data. Carma Lee Smithson (1959), a masters student at the University of Utah conducted extensive ethnographic studies in gender and religion among the Havasupai. Allan Coult (1961) administered standardized psychological tests in an attempt to characterize Hualapai personality traits.

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\(^9\) Colton relates a story that Hargrave was told by an interpreter that “Patayan” is a Hualapai word meaning “old people” (Colton 1945:119).

smaller culture areas known as “branches”; within branches, temporal variations were defined as “phases” (Stone 1987:43).

Schroeder's work at Willow Beach in 1950 was the most extensive and well-documented project in the region to that date. Stratigraphic layers of cultural material were excavated dating from 250 BC to AD 1150. A fair amount of perishables, such as carbonized yucca cordage and cotton textiles, were recovered and at least five distinct occupations were identified (Schroeder 1961). Schroeder published his report with a summary of the work done by the CCC crews in the 1930s (previously unpublished) and a comparison to the archaeological collections of southern Utah, the California desert, and other sites in northern Arizona. In 1957 Schroeder published an article in *American Antiquity* that proposed a new classification for the pre-contact material record in western Arizona and eastern California. He suggested that Hakataya replace Patayan as the root classification for southeastern California, western Arizona, and the Baja Peninsula. Patayan would be limited to just the cultural tradition of northwestern Arizona. Schroeder's suggestion never entered into common use. In later years he expanded the definition of the Hakataya root to include the Sinagua and early Hohokam (Schroeder 1960, 1979). Most Southwestern archaeologists have rejected this classification and the term Patayan has continued to be most frequently used (Euler 1958; McGuire and Schiffer 1982; Stone 1987).

The previously discussed 1929 field session by Kniffen, MacGregor, McKennan, Mekeel, and Mook (Kroeber 1935) collected very limited phoneme and morpheme lists for linguistic analysis. This constituted the primary data upon which the Hualapai language was classified and analyzed until the fieldwork of James Redden and Werner

10 Schroeder stated that Hakataya is the Pai word for the Colorado River (Schroeder 1957:178).
11 Malcolm Rogers continued to use the term "Yuman" for the material record in western Arizona and southeastern California. He argued that the key traits used to define these traditions were recorded to still be in use by the Yuman groups during the early period of European contact; therefore sufficient reason exists to recognize the link between historic and pre-contact groups of the region (Rogers 1945:177).
Winter during the 1950s. Both researchers were primarily interested in examining the inner workings of the Hualapai language itself, though Winter (1957) did publish a study of relationships between the Yuman languages based on cognate lists he collected. One unusual aspect of Winter's (1966) research was his decision to work with a female consultant for his collection of Hualapai narratives. Previous ethnographic endeavors among the Pai tribes seldomly consulted women (even regarding female gender roles) and exhibited no recognition of women as story-tellers.

The dearth of female voices in the ethnographic record of the region makes the work of Carma Lee Smithson (1959:i) particularly interesting for its focus on the “life cycle of the Havasupai woman.” Smithson conducted five separate field sessions, three during the summer and one each in the winter and fall, to gain a broad perspective of Havasupai lifeways. Before publishing her work on Havasupai women, she submitted the manuscript to several tribal members, as well as all of the original consultants, for comment. After the completion of her master’s thesis, Smithson began to compile a manuscript on Havasupai religious practice, incorporating many of the narratives she had collected during her previous research. Unfortunately, before she could complete the manuscript Smithson became very ill and died in 1961 from lymphosarcoma. She bequeathed her manuscript to Robert Euler, a friend whom she felt shared her admiration for the Pai people. The manuscript was published in 1964 without analysis of the narratives or any details regarding the particular consultants, methods of translation, or the context of collection. What is most unfortunate about its publication is that Euler chose to quote the passage from Kroeber regarding Hualapai story-telling skills as an introduction to the narratives (Smithson and Euler 1964:31). Despite some problems, the publications of Smithson and Winter are greatly valuable records of Pai narratives and world view.

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12 Winter found the fewest number of sheired cognates between Dieguéño and Hualapai. Wick Miller (1966) later used Winter’s cognate lists for a glottochronological estimation of the depth of time separating the two languages. He concluded that the time-depth was less than 2000 years. This could be viewed as supporting evidence of the timeline for Pai migration into the region (AD 1150 to AD 1300) argued by Robert Euler (1958:35, 1975:82) in his study of archaeological evidence. Euler’s conclusions are discussed later in this chapter.

13 Smithson does not provide a list of consultants, but does specify that they include three men and six women ranging in age from 31 to 86 (Smithson 1959:i).
Allan Coult (1961) spent six months at Peach Springs in 1959 recording observations about the economic and social impacts of reservation life on the Hualapai. He also administered standardized psychological tests, hoping to discover significant personality traits that would explain what he perceived to be self-destructive squabbling on the Hualapai Tribal Council and in personal relationships. Coult concluded that a lack of economic cooperation pervaded Hualapai society and bred hostility in interpersonal relationships. The breakdown of tribal identity during the historic period caused a failure of traditional social control mechanisms, leading to these overt displays of hostility and self-destruction. Henry Dobyns and Robert Euler (1967:53) responded to Coult's conclusions by asserting that acts of internal tribal aggression were related directly to the tensions caused by Anglo subjugation. This development was not the manifestation of a breakdown in tribal identity or social control, but the product of a pragmatic realization that any acts of outward aggression would be quickly and severely punished by the dominant society. In-group aggression was the only available alternative to release immense cultural tensions. I agree with Dobyns and Euler but suggest another possible explanation. Coult's field work was overly influenced by the concepts of modal personality. He, and many other researchers of ideal culture personality types, failed to question basic assumptions regarding Native American cultures. Internal tension is a normal manifestation in any society, particularly those under the stresses of political subjugation and economic depravation. Coult's characterization of Hualapai social interaction as hostile and self-destructive was heavily based on the naive assumption that ideal Native societies are cohesive and non-confrontational.

Douglas Schwartz (1955, 1956, 1959) published multiple analyses of Havasupai prehistory during the 1950s. Schwartz was most particularly interested in examining the time-depth of Havasupai occupation in Cataract Canyon and their relationship to neighboring groups. Schwartz challenges the predominant classification of the Havasupai as simply an extension of the Hualapai tribe into the Grand Canyon. He argues that most published classifications are based on simplistic readings of the evidence and are too quick to discount Havasupai claims to great time-depth within the canyon. In 1959 Schwartz published an article suggesting new perspectives on the
concept of culture areas should be applied to better understand the Havasupai. He specifically challenges the tendency to force societies into contrived categories, while neglecting incongruancies. The Havasupai speak a Yuman language which places them in closest relationship to groups from the south and west. They exhibited some pre-contact subsistence practices that are analogous to the Great Basin tribes to the north and west. Havasupai maize agriculture and oral traditions, particularly origin narratives, most resemble the Pueblos to the east.

“It is an over-simplification to classify the Havasupai as Basin, Southwestern, or Upland Yuman, and this type of classificatory muddle can be avoided by a more sophisticated approach to the culture area problem. The Havasupai and, to a greater or lesser extent, all cultures have developed from a complex set of historical relationships.” (Schwartz 1959:1068)

Schwartz’s criticism of classification fixation in anthropological analysis is equally applicable to the Hualapai. He repeatedly clashed with Robert Euler, one of the foremost experts on Hualapai prehistory, over Schwartz’s insistence that too many proclamations regarding prehistory in northwestern Arizona are based solely on language relationships and ceramic styles (Schwartz 1959, 1983; Euler 1958:95-99, 1975).

The most voluminous collection of ethnographic and archaeological data was commissioned for the Hualapai land claim proceedings, following the guidelines of the Indian Claims Commission Act (1946). Robert Manners was employed on behalf of the federal government in defense of the claim. Manners collected ethnographic data from limited field research, missionary journals, U.S. Army reports, and the archaeological surveys already discussed. He based his argument against Hualapai claims to nearly 5 million acres in northwestern Arizona on the limited references to encounters with the Hualapai from the historical record; ambiguities in some of those references; an apparent lack of cultural continuity in the ceramic patterns of the region; and the tenuous aspects of socio-political ties among hunters and gatherers. As a gatherer-hunter society, he argues that the Hualapai had limited concepts of land ownership and possessed no formal recognition of tribal identity or central leadership prior to European contact. The lack of centralization and formal tribal identity meant that the pre-contact Hualapai felt no need to defend a common territory and “thereby demonstrated their unconcern for what was
not theirs anyway. What makes it theirs now?" (Manners 1974:177). In drawing this conclusion, he utilized the ethnocentric notions of nationalism and warfare in place of concepts more endemic to Native American self-identity. Manners neglected other, more substantial, evidence for tribal identity such as well defined intra-tribal marriage practices, shared language, common oral tradition, and consistent identification by neighboring societies.

Henry Dobyns and Robert Euler conducted research on behalf of the tribe. The two investigators worked jointly, co-authoring several texts and quoting long passages from each other in their separate works. The wealth of evidence Dobyns and Euler present on behalf of the tribe is overwhelming in light of the limited data available prior to their endeavors. Dobyns synopsis of archaeological evidence, not published for public access until 1974, required three volumes. He also produced three ethnohistorical manuscripts from field interviews and document research (Dobyns 1957a,b,c) detailing the occupation zones and complex social structure of three major divisions within the Hualapai tribe.14 Robert Euler administered archaeological excavations which became the foundation for much of their conclusions. Euler collected substantial evidence from eight sites throughout pre-contact Hualapai lands and ranging in occupation dates from AD 1150 to circa 1870 (Euler 1975:83). He focused on ceramic patterns and milling stones to link the historic Hualapai to northwestern Arizona at least as far back as AD 1150. Euler’s doctoral dissertation (1958) summarized much of the evidence gained during the field sessions with Dobyns and expressly challenged Manners’ conclusion that the Hualapai, as a gatherer-hunter society, lacked concepts of land ownership and cultural continuity. Between them, Dobyns and Euler have authored nine volumes and three articles directly relating to the Pai people.

The Indian Claims Commission (1962:474) published its decision on the Hualapai land claims case in 1962, acknowledging the tribe as an “identifiable group and a land owning entity under the Nooksack, Muckleshoot, and Washoe” decisions. Though this

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14 Dobyns terms these divisions “Congeries” It must be noted that the Havasupai are not included within any of the congeries despite Dobyns’ insistence that the Havasupai are essentially a band of the Hualapai set apart by US military fiat (Dobyns and Euler 1967, 1970).
decision effectively settled the question of Hualapai claims to the lands they occupied at the time of European contact, debate has continued over the time-depth of that occupation. Euler’s argument relies primarily on patterns evident in ceramics and milling stones to designate a date of AD 1150 for the beginning of Hualapai occupation. Schwartz employs a more diverse realm of evidence to conclude a date of AD 600 for Havasupai occupation within Cataract Canyon. The importance of these studies cannot be overstated; each helped legitimize, from the perspective of federal agencies, Native demands to be recognized. However, both arguments focus on evidence in the material record and, while not ignoring Pai oral traditions, marginalize their claims to be the original occupants of the land. Randall McGuire and Michael Schiffer criticize the practice of overemphasizing material remains to identify pre-contact Southwestern groups:

Traditionally archaeologists have defined prehistoric ethnic units from trait lists by assuming that a shared ideology or culture determined a group’s material traits. This perspective ignores other factors. At the extreme of this trait-list approach, pottery styles alone have been used to identify cultures. (McGuire and Schiffer 1982:156)

While material evidence can provide great insights into pre-contact practices and occasionally suggest cultural identity, researchers must continually remind themselves that a) the archaeological record is never complete; b) it can be significantly misleading (see Chapman 1980; McGuire 1982:153-159); and c) typology should reflect reality, not define our perception of reality. In the absence of evidence to prove that the inhabitants of northwestern Arizona prior to AD 1150 (or AD 600) were not the Pai tribes, definitive conclusions should be avoided.

1960 to the Present

Though anthropological activities in the region since the 1950s have not been as ambitious, some significant projects and researchers continue the effort to gain a more insightful understanding of the original inhabitants of northwestern Arizona. To better understand the regional ecology prior to European contact Richard Matson (1971) collected evidence from the Cerbat Valley for a paleoenvironmental model of the region. Gerald Kelso (1976) and Richard Hevly (1974) studied pollen frequencies from
excavated sites. Robert Gasser (1982) examined vegetation stability in the Prescott area. Laurance Linford (1979) analyzed archaeological evidence for pre-contact subsistence and land-use patterns along Burro Creek. Mary Huett (1974) excavated a rock shelter site in the Hualapai Mountains. Allan Schilz (1982) conducted contract work in Red Lake, a playa with an extensive material record. All of the investigators utilized Dobyns and Euler's ethnographic evidence in designing their projects and concluded that the regional environment exhibited long-term stability over the past thousand years and general subsistence practices did not significantly change; but material goods, particularly ceramic styles, were significantly flexible.


The most profound research happening within the Pai communities is the work of Leanne Hinton and Lucille Watahomigie. Leanne Hinton (Hinton 1978; Hinton et al. 1982; Hinton and Watahomigie 1984) is a linguist working with the Havasupai to study traditional song and story. Hinton has been instrumental in developing an alphabet for writing the language and transcribing material to maintain the presence of Havasupai songs and stories in society. Lucille Watahomigie is one of several Hualapai scholars who have sought linguistic training and endeavor to protect the vitality of the language (Hinton and Watahomigie 1984). Watahomigie was a fundamental part of the effort to develop a written alphabet and directs a program designed to implement that alphabet into the formal education of Hualapai children (Watahomigie and McCarty 1994). The
Hualapai Bilingual/Bicultural Education Program, begun in 1975, is a unique combination of efforts to teach the language and traditional subsistence practices to children on the reservation (Watahomigie, et al. 1982, 1983a, 1983b, 1983c, 1983d). The significance of integrating the formal education system, implemented and required by the dominant society, into a community-based program to maintain definitively Hualapai lifeways cannot be overstated. The program utilizes the knowledge of tribal members to instruct children at the Peach Springs School; encourages, and often funds, tribal members to gain formal teaching credentials; integrates new technologies into the inculcation of traditional lifeways; and incorporates parents and community members into educational projects. The program is now one of only twelve Academic Excellence Projects funded by the U.S. Office of Bilingual Education and Minority Office Affairs (Watahomigie and McCarty 1994:27).

Conclusion

Anthropological research into Hualapai culture has relied heavily on the ethnographic fieldwork edited by Alfred Kroeber (1935) and conducted by Henry Dobyns and Robert Euler (Dobyns 1957a, 1957b, 1957c; Euler, 1958) in preparation for the land claims litigation of the 1950s. Prior to the studies initiated during the 1950s, northwestern Arizona was generally perceived as nothing more than a periphery to the classic civilizations of the Colorado plateau and the Sonoran desert. After the heydays of the 1950s, large scale investigations in the region have been less intense. Some recent publications regarding the pre-contact environment and the effects of modern dietary practices on health among the Hualapai signify a close relationship between the people and the lands they have occupied for time immemorial. In light of the history of anthropological research in the region, future investigators must be careful to avoid a) ethnocentric generalizations; b) preoccupation with classificatory models, and c) negligence to the fact that not only do the Hualapai read what is published about them.

15 The realization that the Hualapai Bilingual/Bicultural Education Program had chosen to publish textbooks on general Hualapai ethnobotany and four particular plant resources is what originally inspired the present study.
but they must be recognized as the real authorities on Hualapai culture past, present, and future.

The following chapters address Hualapai ethnohistory and a dialectical approach to understanding Hualapai ethnobotany. The data employed in those chapters derives primarily from the published research reviewed in this chapter. The critical assessment I have presented in this chapter is intended as a means to evaluate the sources and context of the collected data. From this assessment, better questions can be asked and a more informed reading of the evidence of Hualapai culture can be gained.
Nor Have the Waters Yet Ceased Flowing:  
Hualapai Ethnohistory

The relationship between the Hualapai and other indigenous peoples of the southwestern United States and the characteristics of pre-contact lifeways is the subject of much debate in cultural and archaeological investigations from the region. Aside from the work of Henry Dobyns, Robert Euler, and Douglas Schwartz, researchers who attempt to construct a culture history for the region too often either ignore or trivialize Hualapai accounts of their origins and experiences. The following synopsis of Hualapai cultural experience is intended as a synthesis of material evidence and oral history, so that a more holistic understanding may be achieved. I do not attempt a complete reconstruction, nor do I think such is possible. Where there is significant disagreement between published sources, it is noted. The present analysis addresses significant pre-contact, early historic, and recent aspects of Hualapai culture in contrast to analyses that chose to focus exclusively on tribal societies either as they are today or as they were before contact. For the Hualapai there is no fundamental separation between past and present cultural identity - “nor have the waters yet ceased flowing.”

Pre-contact Period

Origins

Hualapai oral tradition describes a great mountain, Wikamé “Spirit Mountain” (Hinton and Watahomigie 1984:16), to the west of the Colorado River as the focal point of life in northwestern Arizona. From this mountain, life began and all the regional tribes migrated after a great flood. Wikamé is officially known as Newberry Mountain today. Euler suggests that Pai migration began from the Colorado River sometime around AD 1150 (Euler 1975:82). Oral tradition is very explicit about the tribe’s relationship to other groups in the American southwest [see Figure 3.1]. The Mohave, Paiutes, Hopi, Navajo, Yavapai, and Havasupai are all identified as originating from Wikamé (Hinton and Watahomigie 1984.35-36, 43; Kroeber 1935:12). The Mohave were the first to be

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1 Cushing (1882:373) translated this admonishment from his Zuni guide regarding the beauty of the Havasupai homeland.
separated, they remained near Wikame while Judaba:h, younger brother of the two Hualapai gods, led the rest of the people on a migration to the east (Hinton and Watahomigie 1984:33). The Paiute, Navajo, and Hopi went their own way soon after the migration began. The Yavapai remained with the Hualapai and Havasupai in Ma6wi9a, but soon started quarreling over food (Hinton and Watahomigie 1984:45-46; Kroeber 1935:25) and were sent away. From that time forward the Yavapai were regarded as an enemy. The Havasupai were the last to split away from the Hualapai (Hinton and Watahomigie 1984:47; Kroeber 1935:25). Linguistic analysis of the mentioned culture

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2 The original canyon home of the Pai people (Hinton and Watahomigie 1984).
3 Euler (1975:82) notes that the Yavapai were specifically called itchahua, “enemy”, during pre-contact times.
groups recognizes the closest relationship between the Yavapai, Hualapai, and Havasupai - with the degree of distinction between two latter groups more aptly described as dialects rather than separate languages (Kendall 1983:5).

Kinship and Political Organization

The ethnographic studies conducted by Kroeber’s team in the 1920s and by Dobyns in the 1950s conclude that Hualapai kinship structure for most of the era preceding European contact consisted of approximately forty camps loosely organized into twelve bands. Each camp was constituted upon patrilineal descent and patrilocal inheritance. At the core of each camp was four to five adult male “hunters” and a camp leader. However, camp membership and identity was fluid. In fact, Leslie Spier (1928:222) and Kroeber’s team (1935:141) each recorded kinship practice as including a brief period of matrilocality, before the new couple would ideally join the husband’s family. John Martin suggests patrilocality was an ideal practice that could be subverted if another adult male was needed in the bride’s camp (Martin 1973:1458). Family was defined at the band level and exogamous marriage was primarily practiced between bands. Dobyns (1957a, b, c) asserts that these bands were additionally categorized into three subtribes that he labeled “congeries.” These congeries, the Yavapai Fighters, Middle Mountain People, and Plateau People, were identified by the geographic zones each occupied. The three geographic zones the Hualapai occupied prior to contact are associated with the vegetation resources each exhibits: the abundant grasses and cacti of the Sonoran desert in the southern portion, the sparse valleys and mountain conifer stands of the Mohave desert in the northwestern third, and the high desert grasslands and piñon-juniper stands of the Colorado Plateau in the northeastern section. The fundamental means of defining each congergy was shared resources during the winter months and in times of subsistence stress.

The geographic zone of the Yavapai Fighters is dominated by upper Sonoran

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4 For an extensive analysis of Kroeber and Dobyns definition of Hualapai camps readers are referred to Martin (1973).

5 McGuire (1983:26) lists 13 bands, the thirteenth being the Havasupai. Watahomigie (et al. 1983a,b,c,d;2) recognize 14 bands but do not cite their source for that number.

6 Kroeber and Dobyns each use the title “hunter” even though, the collection of wild plant foods occupied more of the time of Hualapai males than formal hunting.
vegetation and basin range topography. Population density was low in the area and this conger was probably the most loosely integrated of the three. Dobyns (1957a:1) acknowledges that there was no formal recognition of a socio-political organization within the Yavapai Fighter bands during the pre-contact period; yet, he presents evidence to show consistent endogamous kinship practices between the bands. Further, Dobyns (1957a:5) asserts that informal socio-political ties existed. He applies the name Yavapai Fighters to this group on the assertion that it was their experience on the periphery of Yavapai (a hostile tribe) lands that generated and reinforced strong ties between the bands.

The Middle Mountain conger occupied the northwestern quarter of the Hualapai region. Unlike the other congeries, the Middle Mountain people consisted of just two wide-ranging bands. The Red Rock band inhabited the northern portion and the Cerbat band occupied the southern portion (Dobyns 1957c:1). These two bands practiced the most itinerant degree of seasonal mobility; yet exhibited the most elaborate kinship ties between bands and exercised the most united resistance to non-native incursions during the early historic period (Dobyns 1957c:1-3). A few long-term Middle Mountain settlements were located near springs along the eastern slopes of the Cerbat and Black mountain ranges (Euler, 1958).

The Plateau People occupied an area that constitutes the heart of the present-day reservation as well as the canyon identified in oral tradition as the first home of the Hualapai, Maðwiða. The density of pre-contact occupation was greatest among the Plateau People (Dobyns 1957a:2). This terrain is significantly distinct from the lands of the other two congeries. The Plateau consists of a series of mesas separated by deep cut canyons, rather than the ranges and valleys that dominate the rest of northwestern Arizona. Gordon MacGregor (Kroeber 1935) concludes that individuals from the plateau area were the only Hualapai to attempt significant pre-contact agricultural endeavors. "It is clear that even the pitiful attempt at farming consistently made at Matewitide [cf. Maðwiða] impressed the imagination of the whole tribe far beyond warrant of the actual economic results" (Kroeber 1935:58). Dobyns and Euler (1970:53; 1976:10-12) challenge this conclusion by suggesting that MacGregor was unduly influenced by what
he saw in 1935, a pale reflection of pre-contact Hualapai agriculture after 60 years of Anglo domination. They present evidence for significant intensity and diversity of agriculture throughout the region - though particularly in the plateau area - from ethnographic sources and botanical remains in pre-contact deposits. Hualapai oral tradition identifies several species of domesticated corn, beans, and squash as staple crops (Hinton and Watahomigie 1984:44).

Leadership within a band was conducted by a headman who gained the position by a display of both ability and a connection to the former headman (Spier 1928:236). The position of headman was tenuous and hinged heavily on the prosperity of the band. Most band-level activity occurred during the fall, winter, and spring months and centered around semi-permanent villages (Martin 1973:1449). Families could more efficiently gather, process, and store abundant autumn food resources through band-level cooperation. Winter and spring maintained this level of communal cooperation linked to a shared responsibility and investment in the fall harvest.

During the summer months most camps ranged out away from the winter villages. It was during this period that a headman's position was most vulnerable. The ethnographic record suggests that headmen were not deposed frequently; the position was occasionally relinquished after a difficult winter when some or all of the contingent camps decided not to return the next fall (Martin 1973).

Subsistence - Seasonal Round

Though evidence has been established for notable agricultural practices, by all accounts it was never the primary means of subsistence. The basis of Hualapai nutrition was formed around gathering of seasonal wild plant resources, hunting, and agriculture; in descending order of importance. The seasonal round was founded on cooperative communal resource gathering. Resources were seasonally and elevationally differentiated [see Figure 3.2]. The following is a generalized reconstruction of the Hualapai seasonal round.

In the spring, winter villages would begin to disperse as each camp collected mescal agave (Agave spp.), called viyal in Hualapai, in the canyons and foothills. After the viyal harvest, most band villages fully dispersed as families moved out into the
Figure 3.2 Cross Section of Generalized Hualapai Plant Resources.

valleys and flood basins to collect sîlē³ (Mentzelia albicaulis), the seeds of a wild grass that are rich in carbohydrates and fat (Smith 1973:104). By midsummer, camps began moving back to the canyons and foothills to harvest fruit from various cactus species. The prickly pear, h'ōde (Opuntia spp.), was primary among these. It is also at this time that small game was hunted, such as rabbits and desert rats. Hunts during this period were most often small scale and usually only within the family camp (Kroeber 1935:67). In late summer and early fall banana yucca, manād (Yucca baccata), was gathered. Pronghorn were often hunted at this time as well, incorporating slightly larger hunting parties as band villages began to recollect in preparation for the winter (Kroeber 1935:65).

By mid-fall, nut gathering and communal hunts became the primary means of subsistence. Piñon nuts, ko (Pinus edulis), were gathered in the plateau highlands and mountain ranges. Well worn deer paths, sometimes aided by an early snow, simplified the coordination of large hunting parties. Family camps spent most of the year preparing
for successive winters, but fall was the most important period of the seasonal round. Most of the resources the band village would rely on for survival were collected at this time. Men and women most often played an equal role in botanical gathering; this was especially true during ko harvesting (Kroeber 1935:209). Hunts were often coordinated around ko gathering responsibilities. The importance of ko is very apparent from records of the U.S. military during the Hualapai Wars (1866-1869). Soldiers found it difficult to track down Hualapai fighters, but discovered they could achieve greatest success by destroying ko winter reserves. Military reports from the period meticulously detail the volumes of ko destroyed (U.S. Congress 1936).

**Economics - Trade**

Hualapai concepts of wealth and ownership were significantly different than the River Yuman tribes (see Stewart 1983:57-59). Generalized reciprocity was the basis of group subsistence and interaction. A hunter was obligated to share equal portions of his kill with the members of his hunting party. Families within both the camp setting and winter villages most often shared a communal hearth and carried equal responsibility to contribute to its contents (Martin 1973 1450-1451). Most often food supplies were stored in caves shared by the whole band or in structures built by the community of band members (Spier 1928:212). Land ownership, in the Euro-American conception, was evident but limited. Bands, and sometimes families, claimed communal ownership of certain resource areas. However, access to these areas were always open to friends and relatives without need of permission. Those outside the extended family were still allowed to use these lands, but were expected to offer a small gift in return (Kroeber 1935:161).

The Hualapai maintained regular trade relations with the Hopi located to the east and the Mohave to the west. The Yavapai to the south and the Paiutes to the north bordered Hualapai lands and were generally considered enemies except for periodic alliances. The Hualapai occupied an important leg in the long-range trade routes between the coastal tribes of California and the Pueblan groups of the Colorado Plateau (McGuire 1983.33). The unnavigable falls of the Grand Canyon made a land trade route through northern Arizona necessary. Sea shells and shell beads were the primary goods
transported east from the California coast. The Mohave monopolized trade through the eastern California desert to Arizona (Stone 1987:35). The Hualapai traded dried deer and antelope meat, buckskins, eagle feathers, and big horn ladles to the Mohave for shells and crops grown along the shores of the lower Colorado River. The shells were traded to the Hopi for more crops, pottery, cotton cloth, and woven blankets. The Hualapai later returned to the Mohave with more wild resources and Pueblan goods (Stone 1987:35). These trade networks are noted in the origin narrative told by Kuni and recorded by Gordon MacGregor.

Judaba:h speaks to the Mohave: “If you want meat to eat, the Walapai will have it, and they can come down here and trade it for your corn and squash.” (Kroeber 1935:15)

Judaba:h speaks to the Hopi: “In the winter go trade with the Walapai for mescal and other wild foods they gather in the valleys or in the mountains.” (Kroeber 1935:25)

Through this network of trade the Hualapai not only gained access to exotic goods and diverse cultural relations, but also supplemented the quantity and diversity of their food resources. In fact, both the ethnographic and archaeological records point out that the Hualapai seldomly held on to exotic goods. Precious goods were considered more a means towards gaining better subsistence than acquiring wealth or status (Martin 1973:1449).

**Historic Period**

**Spanish Contact**

The earliest record of Spanish contact with the Hualapai people is the diary of Franciscan missionary Francisco Garcés. In 1776, Garcés made an expedition into northwest Arizona seeking to expand the missionary base of the Franciscans and establish an alternate route of access to the Pueblo cultures of the Plateau. When Garcés traveled through the region around present-day Kingman and Peach Springs, he encountered a

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7 MacGuire notes evidence of Spanish contact with the Havasupai prior to the Garcés expeditions. This contact was brief and occurred while Havasupai traders were visiting the Hopi pueblos.
group of people he identified as the Jaguallapais (Couples 1900:316). Garcés recorded few details of Hualapai practice and subsistence even though he spent approximately two weeks among them during his travels to and from the Pueblos, witnessed several gatherings, and accepted many gifts.

The Hualapai existed in an unusual void of direct contact prior to and following contact with Garcés. The River Yuman groups and the Pueblos were the focus of intense Spanish missionary attempts; yet the Hualapai, living directly between these two cultures, were relatively ignored. Garcés, himself, was unable to establish stronger ties, as he was killed during the Yuma Uprising in 1781. Despite meager direct contact before the 19th Century, Spanish presence weighed heavily upon the economy of the Hualapai. The ancient trade patterns of the Southwest were significantly transformed by the introduction of the horse and gun trade (McGuire 1983:33). Increased trade intensity led to a higher presence of exotic pottery and agricultural products. Many of the distinctive traits of pre-contact Hualapai subsistence culture were either reduced or abandoned as local craftsmanship deferred to shrewd exchange practices (Stone 1987:37).

**Anglo Contact**

In the years following the Garcés expedition, Spanish influence throughout their northern frontier waned. Neither the colonial Spanish nor their Mexican successors ever established regular contact with the Hualapai. Euler (1958:55-59) provides great detail on various Euro-American trappers and traders known to be active in northwestern Arizona, or at least traveled through the area, during the early 1800s through the mid-century; yet every case is described as a “possible contact”. It appears these trappers either avoided Pai lands or felt no need talk of their experiences afterward. However, by the 1850s, they began to experience the effects of direct culture contact with Anglo-America, in the form of the United States Army and various federal agents. The Hualapai world was no longer on the periphery of American interests. The lure of

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8 Euler (1958:46) details how Garcés appropriated the name of one band of the Pai people, the h wál a Ḥapa ("pine people"), to refer to the entire tribe of the Pai - a practice that has persisted.
9 Considering the personalities of Bill Williams, James Ohio Pattie, and the others - men who received great pleasure in listing their many 'friends' - it seems the former is most likely. Yet to be answered is why they would avoid the Hualapai if it is true.
mineral prospects and stable winter grasslands for cattle ranching finally broke the barrier between the Hualapai and the encroaching Euro-American world around them (Stone 1987:38).

A railroad survey party in 1851, under the leadership of Capt. Lorenzo Sitgreaves, is often noted as the first contact by U.S. federal agents; yet the contact was not direct, as most Hualapai they encountered were groups of women collecting wild resources who stayed clear of the Sitgreaves contingent. No direct communication was established. Lt. Amiel Whipple led a similar survey team through the area in 1854, with a very similar experience. In 1858, a group of Anglo settlers from Iowa followed the 'road' constructed by Lt. Edward Beale’s unit through the Hualapai region. When they reached the Colorado River crossing at Needles, they were attacked by a group of Mohave. Eighteen settlers were killed and the rest backtracked towards Albuquerque. As they retreated, they were raided by a few bands of the Hualapai. This event, more than any other precipitated the end of Hualapai seclusion.

The belligerent Mohave bands were crushed immediately by the US Army and a permanent garrison was established on the eastern banks of the Colorado, Fort Mohave. Though no direct action was taken upon the Hualapai at this time, the military presence at Fort Mohave emboldened Anglo settlers to expand their presence in northwestern Arizona. Two particular endeavors drew Anglo pioneers to the area, cattle ranching and mineral prospecting. By 1860, several cattle ranches had been established in the area northwest of Prescott and east of Fort Mohave (Stone 1987:38). These ranches were likely claimed during the late fall and winter, while most Hualapai bands were on the plateaus and in the mountain foothills. They returned to the valleys in the spring to find cattle grazing on their precious seed grasses. “When they came back they were surprised to see that this country was full of white people” (Odopaka, quoted in Kroeber 1935:227). Tensions were high and several small skirmishes occurred, but nothing so substantial to require military intervention. However, in 1863 gold was discovered near Prescott and the onslaught of Anglo incursion began.

**Hualapai War**

**Wauba Yuma**, a respected leader among the Yavapai Fighters, was killed in
1866. The details of who killed him and how it happened has been the focus of much investigation, both in the contemporary period and through the use of the ethnographic record. Regardless of the details, three conclusions can be drawn. 1) The Hualapai responded to Wauba Yuma’s death by mobilizing a unified fighting force, determined to drive Anglo invaders from their lands permanently. 2) The army garrison stationed at Fort Mohave acted quickly and decisively to quell the Hualapai uprising. 3) The effect of the war was transformative. The Hualapai pride themselves on their adaptive abilities; but their experiences during and after the war dwarfed all survival stresses prior to 1866.

Lt. Col. William R. Price commanded the U.S. troops in their battles with the Hualapai. His tactics were decisive, aggressive, and ruthless (McGuire 1983:27). By most accounts the U.S. Army was reluctant to wage war with the Hualapai because it would distract needed manpower and supplies from the on-going battles with the various Apache bands of eastern Arizona and New Mexico. Nonetheless, when the Hualapai began to defend themselves with firearms the army believed they had no choice. Price was given a mandate to settle the uprising as quickly as possible (Dobyns and Euler 1960:54).

Cherum, an influential leader in the Middle Mountain congerly, applied brave and charismatic leadership, shrewd inter-band marriages, and personal trade contacts in ascending to war leadership. Cherum secured guns from the Paiutes in exchange for Mohave horses gained in a raid. Though Cherum held no official title, Price considered him to be the primary leader of the Hualapai. Reportedly, Cherum was able to muster a fighting force 250 men during the height of the war (Dobyns and Euler 1970:39). The Hualapai fought intelligently and effectively, but Price was able to strike at their one main weakness. Cherum knew that his forces could not overwhelm the Army in a direct battle and relied on hit-and-run tactics, mostly when the U.S. soldiers were weaving through vulnerable passes. Price, on the other hand, was willing to endure small loses

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10 Dobyns provides a richly detailed synopsis of virtually all recorded accounts in his analysis of Yavapai Fighter Kinship (1957 7-10).

11 Dobyns and Euler (1970:46) argue that Price identified Cherum as the primary war leader of the Hualapai because of both Cherum’s strategical prowess and the US Army’s tendency to project Euro-American concepts onto Native peoples.
during short skirmishes. His main targets were the Hualapai winter camps. As each camp was encountered, most of them abandoned shortly before the army's arrival, all shelters were burned and food supplies destroyed. In fact, Price's reports convey a certain degree of pleasure in the destruction wrought upon these villages (U.S. Congress 1936).

By the winter of 1869, Hualapai food reserves and spirits had been so depleted that Cherum and the other band leaders sued for peace. For a time they were interned at Camp Beale's Springs, on their aboriginal lands. At this time, the Havasupai were formally recognized as a separate group and interned within Cataract Canyon. In 1871 the Hualapai were forcibly relocated to the Colorado River Indian Reservation at La Paz. The combination of poor health conditions at the reservation; Hualapai disdain for the river environment; and unmistakable hostility towards the Mohave, who had aided the U.S. Army during the war, defined the most miserable period in Hualapai history.12 By 1875, most Hualapai had escaped the reservation and returned to their pre-contact lands (U.S. Congress, Senate 1936:97). When they returned they found that Anglo settlers, particularly ranchers, had claimed most all of their productive lands.13 Whole valleys were overgrazed, water holes and springs were fenced - the Hualapai had been divested of their most important traditional resources (Stone 1987:38).

**Formation of the Hualapai Reservation and the Ghost Dance**

Federal agents decided against further attempts to forcibly remove the Hualapai because resources were too desperately needed elsewhere. However, agents wanted to avoid confrontations between the Hualapai and recent settlers, therefore a temporary reservation was established at Camp Beale's Springs. With virtually no means of self-support and meager government rations, the experience at Camp Beale's Springs was only slightly better than the Colorado River Reservation (Dobyns and Euler 1960:55). An Executive Order established the formal Hualapai Reservation in 1883. The

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12 Dobyns and Euler (1960:55) present disturbing details regarding life for the Hualapai at the Colorado River Indian Reservation.

13 U.S. Army officers assigned to oversee a temporary reservation near Beale Springs consistently reported that stock grazing had depleted wild game and edible grass seeds important to the Hualapai (U.S. Congress, Senate 1936:122, 126, 148, 151). Stone (1987:38) states that over 10,000 head of cattle were introduced to the area in just over two years (1874-1876).
reservation was comprised of 900,000 acres\textsuperscript{14} and satisfied the local Anglo population because it was considered the least desirable land in the region (McGuire 1983:27). For a time, Mohave County residents tried to have the Hualapai removed from even these lands for the purpose of exploring mineral deposits on tribal lands. The county proposal was rejected by the federal government (Stone 1987:38). Though not all Anglo residents sought permanent removal, open hostility towards the Hualapai was not uncommon during the years following the formation of the reservation.

The Wallapai \textit{sic} Indians complain of the quality of the flour served out to them by the government, and say it is full of weevils and has an intensely bitter taste. A plentiful supply of arsenic mixed with it would disguise the bitter taste. 

\textit{(Mohave County Miner, October 8, 1887; quoted in Parezo 1996:106)}

Post-war experience was dominated by malnutrition, disease, economic and political marginality, and paternalistic humiliation by the federal government. Two significant responses during this period are insightful to understanding the Hualapai self-perception, resumption of cremation as a burial practice and the implementation of the Ghost Dance. John McClintock noted the resumption of cremation practices in 1916.

Till wood became scarce and valuable, the dead of the tribe were cremated and the house of death was burned. This custom of destroying the wickiups of brush was extended to a number of neat frame houses that had been built for the tribe by the government. It is probable the relatives exulted in thus furnishing the spirit an exceptionally fine mansion on high.

\textit{(quoted in Stone 1987:38)}

The Ghost Dance was introduced to the Hualapai by the Southern Paiutes in 1889. The Ghost Dance had two ideological goals; 1) removal of the Anglos from their lands and a return to pre-contact subsistence patterns; and 2) a glorious resurrection of their dead ancestors to share in bounty of their regained lands (Dobyns and Euler 1967:1). Participation in the dances was not complete among the Hualapai. A few influential leaders were skeptical of its potential and some simply believed that Anglos were not going to go away, despite the dance. Through 1895, several dances were held at varying intervals and lengths. One dance was recorded as lasting four months and ceased only because food supplies ran out (Dobyns and Euler 1967:8-9). The movement slowly faded

\textsuperscript{14} This total acreage represents less than one tenth of their pre-contact range (Parezo 1996:103).
in popular participation as experience did not bear out the promised goals. The last recorded Pai Ghost Dance was in August 1895 and was led by Cherum, one of the primary military leaders during the war.

20th Century Economics, Demographics, and Political Structure

By the 1890s, most Hualapai lived off the reservation, predominantly in railroad towns to the south because they offered more viable economic opportunities. The future of the reservation as a homeland from which to rebuild a Hualapai lifeway appeared bleak in the early 1900s. Superintendent Oliver Gates reported that “scarcely a dozen families live on the reservation” (McGuire 1983:28). However, the Great Depression played a vital role in the rejuvenation of the reservation. New Deal programs like the Civilian Conservation Corps lured young men and families back to the reservation with the promise of jobs and better infrastructure. Even when these programs were terminated, most remained and began tending small herds of cattle (McGuire 1983:28). The 1934 Indian Reorganization Act (IRA) promised greater self-determination to Native American tribes and drew some individuals back to the reservation with the potential for more traditional communal living (Coult 1961:12). The IRA ultimately had little positive effect in re-establishing or supporting traditional lifeways. Instead it imposed more Euro-American ideals of government and social structure onto reservations that incorporated within it. However, the 1930s did help reaffirm the Hualapai reservation as a viable entity over the long term. “They fenced the reservation area. Titled it, and gave it to us. And here it is. I will not let this go” (Kate Crozier, quoted in Hinton and Watahomigie 1984:85).

Since the 1930s, the Hualapai have continued to face many health, socio-economic, and political challenges. Rates of diabetes among women over the age of 35 have been reported in the range of 25-30% of the population, as opposed to 1-2% for the general U.S. population (Smith 1970:1,10). Wage-labor migration has continued to sap the reservation of young leaders. Federal funding for low income housing has threatened Hualapai identity by imposing Euro-American concepts of family, thus separating more

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15 For a more detailed examination of the Pai Ghost Dance and its demise, readers are referred to Dobyns and Euler (1967).
traditional extended families (Watahomigie and McCarty 1994:39). Bureau of Indian Affairs policies have alternately helped economic growth through direct funding, and hampered progress by restrictive and paternalistic guidelines. In 1970 an Arizona state government survey found only 92 tribal members had permanent employment out of a total available work force of 392 (McGuire 1983:29). By 1990 60% of the tribal population continued to rely on federal welfare and subsidy programs (Teufel and Dufour 1990:1229). As of 1994, the tribal unemployment rate was 32.4% (Smith 1994:183); over 80% of the potential work force was unable to find employment on the reservation; while nearly half the population was under the age of 16 (Watahomigie and McCarty 1994:30).

The Hualapai people are aware of these significant problems as well as the immense potential to address issues in a manner that does not compromise ecological values held by a majority of tribal members. The tribe is pursuing opportunities to elevate the current economic viability of the reservation while requiring long-term sustainability and maintaining a respect for the physical landscape. Environmentally non-intrusive tribe-owned enterprises have been established which provide double benefits to members by offering potential employment and increased dividends through the tribal corporation. These enterprises include a doll factory at Peach Springs and Hualapai River Runners, a rafting operation on the Colorado river through the western Grand Canyon. The development of timber resources on the reservation is encouraged without compromising ecological integrity through a sustained-yield management plan initiated in 1978 (MacGuire 1983:29). The tribe chose to sacrifice economic development through mineral extraction when they voted to deny access to uranium mining on reservation lands because the cultural costs far out-weigh any economic benefits (Smith 1994:184). Joe Flies-Away, a council member and tribal planner, initiated a restructuring of the tribe’s Economic Development Administration in 1992. The agency was renamed the Hualapai Office of Planning and Community Vision to acknowledge the reincorporation of Hualapai cosmology into project evaluations for
reservation development.

Instead of focusing on development projects on a piecemeal basis, an overall structure is in place for analyzing each project. The plan focuses on various aspects of life: spirituality, health, education, community, and so on. These criteria are very different from simply jobs and profits. (Smith 1994:186)

The tribe has also pursued programs to strengthen Hualapai concerns well outside the realm of economic development. The most ambitious of these endeavors is the Hualapai Bilingual/Bicultural Education Program at Peach Springs School. The stated goals of the program are:

a) native language literacy and biliteracy development, including continued work on the Hualapai writing system; b) creation of a fully integrated bilingual/bicultural curriculum; c) staff development and local capacity building; d) parent/community involvement; and e) creation of a model and mechanisms to adapt and replicate the Hualapai program at other schools. (Watahomigie and McCarty 1994:32)

The Hualapai Bilingual/Bicultural Education Program is a significant realization of efforts to maintain cultural integrity and identity. The program was not introduced from a federal agency or any other remote entity - it was initiated by tribal members and has remained a Hualapai endeavor to integrate traditional language, practices, and values with the abilities needed to operate in the dominant society. The program is located at the reservation’s elementary school and is specifically designed to inculcate tribal children. However, its structure is equally designed to encourage a re-emergence of community-based education traditions; accentuate local resources (human and environmental); and nourish a holistic expression of Hualapai identity.

From negotiations about the way Hualapai would be represented in its written form, to the elaboration of instructional content and the method of its delivery, local people played the decisive roles. As a result, Peach Springs now has a school of the community’s choice (author’s emphasis). (Watahomigie and McCarty 1994:40).

Ultimately, the program empowers individual members (children and adults) to succeed in society without losing connection to their cultural heritage. A separate, but no less significant, benefit of the Hualapai Bilingual/Bicultural Education Program is the emphasis it has placed on traditional subsistence as a means to convey tribal identity to
new generations. Two separate studies over the past thirty years provide strong evidence that tribal members who follow dietary practices consistent with pre-contact subsistence exhibit significantly lower percentages of diabetes (Smith 1970) and the related problem of obesity (Teufel and Dufour 1990).

The Hualapai Office of Planning and Community Vision and the Hualapai Bilingual/Bicultural Education Program are formal manifestations of a immanent determination to preserve tribal lifeways. The Hualapai have maintained a self-identity throughout their existence. When external societies have attempted to impose values and practices upon them, the Hualapai outwardly incorporated only those aspects they considered valuable and informally subsumed them within their own worldview. These recent programs are not different in character, only in their overtness. The fundamental nature of Hualapai cosmology remains unchanged.

Our Hualapai Tribe had great leaders who laid a foundation upon which we have been able to build and maintain through the years our pride, dignity, culture, and honesty, which is a measure of our past leaders. We have not been stripped of these qualities and will always have them for we are the First Americans. (Wilfred R. Watoname, Sr., quoted in Dobyns and Euler 1976:vi)

**Conclusion**

The Hualapai people have experienced dramatic changes over the centuries - from a migration to new lands to a separation into distinct groups; from a river and desert to mountains and plateaus; from Yavapai, Mohave, and Paiute to missionaries, settlers, and bureaucrats; from shell, ceramic, and cotton trade to guns, mining, and tourists. They have endured these changes, but they have caused some changes as well. Recent endeavors to strengthen Hualapai practices and values while passing them to the young generation is nothing new for them. Whether gathering piñon nuts or driving a tractor-trailer, certain principles of Hualapai life ways have remained present in the people. Through a consideration of time-depth and significant events a deeper understanding of the culture can be achieved and recognition gained that a distinct Hualapai identity continues to exist.
Landscape, Coyote, and the Hualapai: A Dialectical Approach

But Coyote said, "Whoever heard of fruit without thorns?" So he shaved up juniper bark and threw the splinters over the cactus, and it has borne spines since. (Kuni, quoted in Kroeber 1935:17)

Plants are not selected at random by members of any known culture, and they probably were not by any prehistoric peoples of North America. They were named, classified, and collected according to the rules and beliefs of each culture. (Ford 1979:286)

Ethnobotany is a product of the interrelationship between material resources and cultural perceptions of value. Value is expressed through both resource preferences and symbolic representations of their importance. The physical and ideological realms interact in a dialectical matrix that produces a cultural landscape for the region. The present chapter provides evidence that the Hualapai landscape of northwestern Arizona, throughout their occupation of the region, supports this thesis. Conceptually, the chapter is separated into descriptions of the physical and ideological realms, then synthesized into an analysis of the cultural (Hualapai) landscape. Emphasis is placed on the concepts of heterarchy and interrelatedness in constructing a synthesis of the dialectical matrix. Primacy is not acknowledged for either the physical or ideological realms in order to develop a model for Hualapai ethnobotany that seeks to elucidate the dynamic relationship between them.

The Physical Realm

Terrain

Prior to the reservation period, the Hualapai inhabited a diverse expanse of land in present-day northwestern Arizona. It was bounded by the Colorado River on the north; Cataract Canyon to the east; the Santa Maria and Bill Williams Rivers to the south; and the Black Mountains, bordering the Colorado River, to the west (Euler 1958:1). This area exhibits remarkable diversity in topography, hydrology, and vegetation. It ranges from 500 feet in elevation along the Colorado River to 8417 feet at Hualapai Peak. It overlaps three vegetational zones: the Colorado Plateau, the northern Sonoran Desert,
and the western Mohave Desert [see Figure 4.1]; and three geologic zones: the Basin and Range; the Transition zone, and the Plateau [see Figure 4.2]. Besides the Colorado River, the Bill Williams, Big Sandy, and Santa Maria rivers provide reliable stream flows\(^1\) and there are over 220 effluent springs in the region (Stone 1987:13). Summer rains are unpredictable and often cause extensive erosion. Winter rains tend to bring less volume but more effective precipitation. Indigenous vegetation ranges from sparse catclaw and prickly pear zones in the western valleys (Mohave Desert) to abundant species of cacti, yucca, agave, and bunch grasses in the central valleys (Sonoran Desert) and eastern plateaus (Colorado Plateau); with piñon-juniper stands in the mountain ranges and plateaus. The predominant faunal species in the region are pronghorn

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\(^1\) The Bill Williams, Big Sandy, and Santa Maria are technically termed "perennial interrupted streams", which means that they are permanent flows but some segments are subsurface during times of low rainfall (Wolcott, Skibitzke, and Halpenny 1956, cited in Stone 1987:13).
(Antilocapra americana), a wide variety of rodents and rabbits, mule deer (Odocoileus hemionus), white-tailed deer (Odocoileus virginianus), and small herds of elk (Cervus canadensis). Other than coyotes (Canis lupus) and bobcats (Lynx rufus), very few carnivores continue to inhabit the region since the period of Anglo settlement.

The Hualapai occupied lands that ranged over three geologic zones: Plateau, Transition zone, and Basin and Range. The northeastern portion of traditional Hualapai lands belongs to the Colorado Plateau; the southwestern to the Basin and Range Province; and these are bisected diagonally by the transition zone. The Colorado Plateau, over 5000 feet in elevation, is actually composed of several raised mesas separated by deep cut canyons. At the eastern periphery, the Plateau is a relatively unbroken grass and piñon plain from the Grand Canyon south to the San Francisco Peaks near Flagstaff. The Basin and Range Province is marked by elongated roughly parallel mountain ranges, often rising thousands of feet above relatively flat, arid valleys. These mountain ranges are the result of tectonic collisions and fault lines in the Earth's crust, known as block faults. The interceding valleys tend to retain relatively low relief, as they subsided when the mountains were thrust upward; with the exception of bowl shaped erosional deposition at the base of each range. The Transition zone incorporates the ancient fault line known as the Mogollon Rim and the immediate valleys associated to it. The aptly named Grand Wash Cliffs drop 3000 feet from plateau to basin. The cliffs, at the northwestern edge of the transition zone, mark the only point in which the Plateau and Basin and Range provinces are in immediate proximity.

**Ethnobotanical Use of Vival, H'ōe, Manaò, and Ko**

The Hualapai were knowledgeable about the geographic region that the plants were abundant; the exact time of year to gather the plant; the specific art of the plant to be prepared for medicine, food, or utilitarian use; and special ceremonies used for each respective plant. (Watahomigie, et al. 1983a,b,c,&d:2)

From the diverse physical landscape of northwestern Arizona the Hualapai established a subsistence base, particularly through native plants. The pre-contact seasonal round was presented in the previous chapter; but it is important to note how these plants were used and what nutritive value they provide. Like most gatherer-hunter
societies, the Hualapai were efficient in extracting multiple resources from each plant and relied on more than floral resources for nutritional balance. The following analysis addresses only four primary plant resources utilized by the Hualapai prior to Anglo settlement and recently revitalized as part of the Hualapai Bilingual/Bicultural Education Program: mescal agave (*Agave* spp.), prickly pear fruit (*Opuntia* spp.), banana yucca (*Yucca baccata*), and piñon pine nuts (*Pinus edulis*).

The Hualapai name for mescal agave is *viyal* (Watahomigie et al. 1983a). Premature *viyal* stalks were often eaten raw like a sugar cane. Stalks in full bloom were cut and baked in an earth oven for several days. After the coals had cooled, the stalks were removed and the inner core was most often eaten immediately. The rest of the stalk was mashed and dried in the sun. Dried slabs were stored for winter and were boiled in water to be eaten or to make a beverage. The sap of the stalk was used to make a skin cream and the leaves were used to make baskets, ropes, cradle mats, and sandals. The fiber of the stalk was often crushed and used as a bonding agent in ceramics (Kroeber 1935:87; Watahomigie et al. 1982:55).

The fruit of the prickly pear, *h'đe* (Watahomigie, et al. 1983b), was removed from the cacti pads with tongs; then beat with rabbit brush to remove the spines. The fruit was then eaten raw or dried for storage. It could be reconstituted in boiling water to make a sweet drink or ground into gruel and used to treat stomach disorders (Watahomigie, et al. 1982:4). Many different species of the prickly pear were utilized, each named after the animals known to eat them (Watahomigie et al. 1983b:14).

Banana yucca, *manađ* (Watahomigie et al. 1983c), roots were used to make a shampoo. Stems were an important source of fibers for weaving baskets, cradle mats, and sandals. The fruits were harvested and eaten raw or cooked in hot coals. After cooking, the fruits could be eaten, dried and stored, or ground into a meal. Sometimes the dried fruits were used to make a fermented beverage (Watahomigie, et al. 1982:38).

Piñon pine trees provided several resources, but of primary importance were the nuts, *ko* (Watahomigie 1983d). About half of the *ko* harvest was winnowed with coals and ground into a paste. The paste was usually made into a soup or formed into cakes to be dried. The rest of the harvest was either eaten raw or winnowed and stored for the
winter. Pitch from the piñon was extracted to glue projectile points and to waterproof baskets. Sometimes the pitch was chewed like a gum. The needles of the piñon tree, and other pines, were often used to make a medicinal tea (Watahomigie, et al. 1982:35).

Hualapai nutritional needs were met through a number of different resources - wild plants, hunting, small scale agriculture, and trade. Based on ethnographic descriptions, wild plants comprised approximately 35-40% of the Hualapai diet (Gallagher 1977:129), with the four plants highlighted in this analysis providing the highest bulk of calories [see figure 4.3*]. A combination of these resources was not enough to provide a good nutritional balance - protein is particularly deficient. However, this deficiency was likely offset by protein influx from wild game, which comprised an approximately equal volume to wild plants (Gallagher 177:129). The high carbohydrate levels in these wild plants are not problematic as they are not excessive and would be

* Mescal agave, prickly pear fruits, banana yucca, and piñon pine nuts have been analyzed for their nutritional composition at different laboratories, at different times, and for various objectives. The following table is a compiled synopsis of the published record for these five food sources.

<table>
<thead>
<tr>
<th>Plant</th>
<th>Protein %</th>
<th>Fat %</th>
<th>Carbohydrate %</th>
<th>†Calories</th>
<th>Ash %</th>
<th>Calcium %</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viyal (pulp)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agave parryi</td>
<td>4.56</td>
<td>1.06</td>
<td>81.0</td>
<td>347</td>
<td>8.16</td>
<td>2.43</td>
<td>1</td>
</tr>
<tr>
<td>H’öe (fruit)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opuntia basilaris</td>
<td>1.74</td>
<td>2.55</td>
<td>62.0</td>
<td>280</td>
<td>18.27</td>
<td>6.44</td>
<td>1</td>
</tr>
<tr>
<td>Manað (fruit)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yucca baccata</td>
<td>8.60</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>4.60</td>
<td>N/A</td>
<td>1</td>
</tr>
<tr>
<td>Yucca arizonica</td>
<td>1.21</td>
<td>0.89</td>
<td>93.0</td>
<td>403</td>
<td>2.72</td>
<td>0.24</td>
<td>1</td>
</tr>
<tr>
<td>Ko (nut)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pinus edulis</td>
<td>13.0</td>
<td>60.50</td>
<td>20.5</td>
<td>635</td>
<td>2.90</td>
<td>0.01</td>
<td>2</td>
</tr>
</tbody>
</table>

† Calories per 100 grams
Sources:
1 Gallagher, Marsha V., 1977:135
2 Harrington, Harold D., 1967:144

Figure 4.3 Nutritional Table of Hualapai Wild Plant Foods.
balanced by normal protein levels. The pre-contact diet was also low in fat except for ko. Though the fat content in ko is relatively high, it is composed of healthy polyunsaturated fats (Gallagher 177:130). This evidence suggests that the Hualapai diet prior to European contact was within the parameters of what is considered a healthy, balanced diet by modern nutritionists.

The Ideological Realm

The physical environment is a vital factor in the development of ethnobotanical practices for any society, but it is not the only factor and should not be assumed to have primary influence on social practice. A cultural landscape is the product of a dynamic relationship between the physical and the ideological realms. Ideology is the means by which a society places meaning and value on the physical realm; it is the conduit through which they manipulate the tangible environment. Though ideological structure is expressed in many ways, the focus of this section is symbolic representations of the landscape expressed in the oral tradition of Hualapai society.

Through these songs and tales, everything in their daily lives would be imbued with powerful significance. Every plant, every hill, every spring was the actual site of some historic or spiritual event in a tale, and the harvesting of a plant or arrival at some location would recall the rich set of events depicted in the tales. (Hinton and Watahomigie 1984:6)

Oral Tradition of Viyal, H'de, Manað, and Ko

The Hualapai utilized multiple resources, floral and faunal, and participated in regular trade with neighboring societies to address subsistence needs; however four particular plants achieved a preferred status. The ethnographic record contains repeated references to a special position for viyal, h'de, manað, and ko in the Hualapai conception of their landscape. This pattern of importance re-emerged in recent publications of the Hualapai Bilingual/Bicultural Education Program (Watahomigie et al. 1983a,b,c,&d). The status and representational associations of these plants are a means to examine the Hualapai ideological realm.

In the origin narrative told by Kuni and recorded by Gordon MacGregor in 1929 (Kroeber 1935:12-26) the bulk of the story is focused on instructions from Judabah:
younger brother, to the peoples of the earth on the foods they are to have and how to prepare them. The first four plants given to the Hualapai are, in order, piñon-juniper trees, manað, viyal, and “tuna cactus”[prickly pear] (Kroeber 1935:17-18). In the oral tradition “Maðwiða” told by Elenora Mapatis and published by Lucille Watahomigie (Hinton and Watahomigie 1984:43-52) the native plants gathered by the first Hualapai at Maðwiða are listed as piñon, banana yucca [manað], and mescal agave [viyal](Hinton and Watahomigie 1984:44). In the narrative “Coyote and Wolf Discuss what Shall Be” told by Odopaka and recorded by Maurice Mook (Kroeber 1935:250-252), the first plants considered are vial [sic], tuna cactus, piñon [ko], and “Spanish bayonet”[manað] (Kroeber 1935:251). These plants are further set apart from the rest because these four are suggested by Wolf to be eaten as is, only to be made more difficult to gain and prepare by Coyote.

Wolf said, “When piñons are ripe, all that one will need to do is crack the cone and eat the nuts inside.” Coyote said, “No, they will be in cones, but there will be a juice (pitch) on the outside. They will have to be put in the fire until the nuts inside are cooked and until the sap is melted from the outside. Then the nuts will be ready to eat.” Again Wolf agreed.

(Kroeber 1935:251)

These four plants which exhibit a special status in the ethnographic record are the same four chosen by the Hualapai Bilingual/Bicultural Education Program as the subject of instructional texts published in 1983 (Watahomigie et al. 1983a,b,c&d).

The Pattern Number Four

The number four has symbolic significance in the ethnographic record as well. It corresponds to what anthropological linguists refer to as the pattern number of a society. “All societies seem to favor certain numbers, considering them magical or simply using them in organizing the world around them. American Indians most frequently use three or four as pattern numbers” (Kinkade and Mattina, n.d.:266). From the oral tradition, when Maðvil, older brother, becomes sick he asks Coyote if a dead person will come back to life in four days. Coyote tells him it cannot be (Kroeber 1935:249). When Maðvil dies, Judaba:ḥ informs the people that they must burn his body for four days and he will come back to life, but Coyote steals Maðvil’s heart and prevents his resurrection.
**Hualapai** social practice also exhibits the pattern number. The ethnographic description of shaman training states that after a person receives the calling in a dream, she/he is required to spend four nights alone on a mountain communicating with the spirit of the mountain to learn her/his powers (Kroeber 1935:186). An adolescent girl’s first menses is supposed to last four days and should be followed by four days of cleansing (Kroeber 1935:139). Mothers and fathers are forbidden to touch their newborn child for four days after birth to prevent deformities and disease (Kroeber 1935:129 & 133). Husband and wife are to avoid intercourse for forty days after birth (Kroeber 1935:131 & 134). Piñon trees, yucca plants, and some species of prickly pear produce nuts/fruit only every fourth year (Watahomigie et al. 1983d:2, c:16, & b:2).

**Coyote**

Coyote, as with many Native American societies, is a central figure in Hualapai oral tradition. Henry P. Ewing (1961) recorded an origin narrative that referred to **Judaba:h**, younger brother, as Kathat Kanave. However Kathat is the Hualapai name of Coyote (KaBa’t, Kroeber 1935:13; Kathad, Hinton and Watahomigie 1984:29). The term Kathat Kanave translates to ‘(What) Coyote told, Coyote’s teachings’ and actually refers to the whole mythic period in Hualapai tradition (Kroeber 1935:203, McGuire 1983:26). In the origin narrative told by Odopaka and recorded by Maurice Mook, there is only one creator god, Coyote (Kroeber 1935:247-249). While these examples blur the lines of character identification, they help reveal the crucial symbolic role Coyote serves in orienting the Hualapai to the physical and social world around them. “Coyote Law, as some Yumans call it, is the law of the land - sometimes capricious and unreasonable like Coyote himself - but nevertheless, the way things are” (Hinton and Watahomigie 1984:6). In separate narratives and sometimes within different contexts of the same narrative, Coyote is represented as a comical trickster and a powerful transformer of the environment. He is a complex and dynamic figure.
Coyote has human attributes, such as a voice, yet he also possesses physical features that are associated with the biological coyote, such as a black and upturned nose (Hinton and Watahomigie 1984:32). He is described as exhibiting many of the character traits attributed to the animal (scavenger, glutton, survivor) and distinctively human traits (sagacity, envy, sexuality). He transforms the environment by design - Coyote and Wolf decide how important plants will be used (Kroeber 1935:250-252) - as well as by accident - domesticated crops grow from Madvil’s body after Coyote prevents his resurrection (Kroeber 1935:13). His actions are guidelines to wise and proper living - usually through a negative example of his treachery or foolishness (Winter 1966:25, Kroeber 1935:265), though periodically as a positive example of tenacious survival and adaptability (Kroeber 1935:260-261). Sometimes his actions are purely comical rather than instructive (Kroeber 1935:268). Through all these aspects, he is endemic of Hualapai ideology.

Coyote is both human and animal. As an animal, Coyote represents the non-human sphere, the physical realm of northwestern Arizona - multi-faceted, unpredictable, and sometimes hostile. Coyote prevents eternal life on earth but causes the first domesticated crops with the same action. He decides that viyal, h’de, manado, and ko will be the most difficult foods to obtain (Kroeber 1935 17, 250-252). As a human, he represents the Hualapai themselves. He is a child who must learn patience, responsibility, and respect for elders. He is an adult who has surmounted many of the challenges of life in an unpredictable world through ingenuity and persistence. Coyote represents the transitory state that links the adolescent and adult domains, as well as the human and non-human spheres. He is not human or animal, but both. He is a symbol of the dialectical synthesis manifest in the Hualapai cultural landscape.

Synthesis

Why did viyal, h’de, manado, and ko emerge as preferred resources - why not other plants? Are they the most abundant of the native species? Were they preordained

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^ "But Coyote said, Whoever heard of fruit without thorns? So he shaved up juniper bark and threw the splinters over the cactus, and it has borne spines since" (Kroeber 1935:17).
for the Hualapai people by the creator? Do they provide the best nutrition out of the available choices? Is there something in their structure that has indelibly embued Hualapai cosmology? Too many explanations have sought an answer through one of these questions instead of searching for insights between them. The Hualapai people are both pragmatic and spiritual, rather than one or the other. Models that privilege functional explanations, either cognitive or materialistic, fail to address the complex dynamic between pragmatic choices and spiritual convictions - between what is physically advantageous and what is symbolically significant. The dialectical approach seeks an inclusive understanding rather than an exclusive answer. One of the key concepts in a dialectical approach is the recognition of heterarchial relationships between systems in a cultural landscape, rather than assumed hierarchical relationships upon which functionalist models are based. The concept of heterarchy recognizes multiple systems and sub-systems within the cultural landscape; yet specifically renounces directional ranking of importance or influence. The reality of all cultural landscapes is that any element can have equal impact upon the overall system, regardless of its scale. Underlying this perspective is a recognition that relationships within and between the physical and ideological realms are observable, moderately predictable, but infinite in possibilities. Cultural reality is dynamic.

The physical environment of northwestern Arizona presents certain challenges and possibilities. Water resources are scarce and unpredictable, soils are thin and poor, the topography wildly undulates from valleys to mountains and plateaus to canyons. Despite these elements that seem to dictate chaos, the land supports a rich diversity of wild plants and animals. The Hualapai are adeptly attuned to the productive potential of their landscape and the long term costs of production choices. Prior to European contact the Hualapai engaged in nomadic gathering and hunting, limited agriculture, and long distance trade to acquire subsistence needs. Their subsistence practices can not be accurately defined as purely an adaptation to the environment, nor as an intensive manipulation of its production potential - it was combination of both. Family gardens

3 However this diversity has been severely altered since the introduction of cattle ranching and capitalist economics to the region.
were constructed and maintained near springs and along river and arroyo banks. But families were not dependent on their gardens when a crop failed, nor were they tethered to them when time came to gather wild resources. While the Mohave to the southwest and the Hopi to the northeast practiced intensive agriculture, the Hualapai maintained surpluses of wild foods for trade - achieving a diversity and stability of subsistence for each group involved. The physical terrain did not predicate subsistence, nor was it an obstacle to be conquered. The Hualapai pursued a mutually beneficial relationship with their environment, by which each provided for the other. Today the tribe pursues a similar trajectory, though new factors have significantly altered its context.

The modern political economic milieu in northwestern Arizona has severely confined pre-contact subsistence mobility and replaced it with wage-labor migration. Vegetation diversity is threatened by overgrazing, commercial development, and noxious non-native species. Nutritional diversity is threatened by aggressive marketing of pre-packaged, low nutrition, fast foods and government assistance programs that privilege food markets rather than traditional subsistence. The Hualapai continue to pursue a mutually beneficial relationship with their environment despite these challenges. The tribe has sometimes sacrificed immediate economic development, such as uranium mining, in favor of long term cultural investment, such as the Hualapai Bilingual/Bicultural Education Project and the Hualapai Office of Planning and Community Vision. The Bilingual/Bicultural program has a multi-faceted effect in rejuvenating traditional subsistence: it 1) reinvigorates tribal enculturation of children; 2) advocates the protection of native vegetation species; 3) accentuates the balance and nutritive value of pre-contact foodways, over the unhealthy practices of a modern commercial diet. The Planning and Community Vision office has reasserted community control of the reservation’s future. Vital issues are discussed and decided on Hualapai terms, rather than those dictated by standardized federal policies.

Hualapai cosmology reflects a deep faith in divine design of the northwestern Arizona landscape. Plant resources were not serendipitous nor simply utilitarian. The creator chose certain riches for the Hualapai that are a part of what identifies them as a people. Each plant occupies a specific place geographically and seasonally, in volume
and utilization, in ritual and metaphor - there is patterned design to all aspects of the landscape. Yet the Hualapai do not assume that these material riches are theirs to possess and dispose of as they please. A covenant of mutual respect and sustenance exists between them and their environment. Hualapai ideology is not an adaptation nor a manipulation of the environment - it is a manifestation of a dialectical interaction between material and cognitive realities. The physical and ideological realms exist in a heterarchial relationship - each defined, and continually redefined, by the other.

Conclusions

Descriptions and analyses of pre-contact ethnobotanical practices have too often been predicated upon restrictive theoretical perspectives and designed to accommodate normative models. A dialectical approach, accentuating the concepts of landscape and heterarchy, provides an opportunity to step beyond the confining walls of previous paradigms and appreciate the complexity and rich interactions of human lifeways, particularly subsistence. Evidence from the physical and ideological realms, regarding the use of mescal agave, prickly pear cactus, banana yucca, and piñon pine by the Hualapai tribe prior to European contact, during the early historic period, and in recent tribal programs is developed through independent paths of study. This methodology of independent paths is incorporated within a dialectical approach in order to accentuate the ambiguities between the physical and ideological realms. In addressing the ambiguities between the two lines of study, new questions emerge and a more holistic understanding of Hualapai ethnobotany is achieved. Hualapai cultural practices are not defined by the environment of northwestern Arizona, nor are they separated from it. The Hualapai continue to exist in dynamic, dialectical relationship with their environment and the world surrounding them.

This etiology is not meant to elevate itself above the work of past researchers - I acknowledge an enormous debt to the authors who collected and published the incorporated field data - but to offer a new perspective that endeavors to be more inclusive of Native voices and perspectives, while accentuating the dynamics and diversity within Hualapai ethnobotanical practices rather than boxing it into etic.
taxonomy. Hualapai ethnobotany is not determined by either the environment of northwestern Arizona or the psychological structure of the people who settled this land; nor is it defined by normative categories. It is just beyond the reach of all these synchronic paradigms because of its dynamic, symbiotic, and pan-chronic essence. Ultimately, the Hualapai people must be recognized as the expert scholars of ethnobotany in the landscape of northwestern Arizona.
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