The LAMBDA ALPHA Journal of Man is published annually by the Lambda Alpha Anthropology Honors Society at Wichita State University. The Journal of Man is partially funded by the Wichita State University Student Government Association.

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The Editor
Journal of Man
Department of Anthropology
Wichita, KS 67208
The LAMBDA ALPHA National Office has two branches. The Wichita State University office handles the Journal of Man and its publication. The National Executive Office is located in Cambridge Springs, Pennsylvania.

Questions concerning the Journal of Man should be directed to:

LAMBDA ALPHA Journal of Man
Anthropology Department, Box 52
Wichita State University
Wichita, KS 67208

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CORRECTION:

In Volume 12, page 12, the quotation should read:

"One important result is this: when the situation being defined by society is the naturalistic depiction of sex, the most real consequence of a definition that labels it something less than pornographic is to increase its pornographic use in society by lessening the inhibitions on acquiring it."
The editorial staff of the Journal of Man are very pleased with the papers presented in this volume. A varied offering has been prepared which ranges from archeology to cultural anthropology to primatology. All of us have enjoyed this diversity and hope to continue such in future volumes.

Robert Blasing's paper, "Pre-European Cultural Relationships Between the Plains and Southwest Regions," discusses Plains-Southwest interactions and relationships. Utilizing both archeological and ethnographic evidence, Blasing provides useful information ranging from the Paleo-Indian to the Historic Period for Plains-Southwest contact. Positing migration, either group or individually, trade, diffusion by simple contact, warfare and competition and population pressure as causal factors, Blasing delineates available evidence and general trends and changes through time. He concludes that "the boundary between the Southwest and the Plains would seem to have been both cultural and geographic" which resulted in a dichotomy between the Plains and the Southwest.

The second article, "Puberty Rites for the Sinhalese Female" by Deemathie de Silva, presents a description and analysis of the female puberty rite in Sri Lanka. An integral part of the Sinhalese cultural system, this rite de passage provides a socio-psychological mechanism for integration of females into their adult roles. Mrs. de Silva points out that "the rite is conducive to an easy access to the psychological preparation for the biological realitites of femaleness" and provides the girl with a stable female identity.

The final paper, "Orang and Bushbaby Social Life: Why so Similar?" by Jerry Smith is a comparative study of the behavior of the bushbaby and the orang-utan. Both the galago, a prosimian, and the orang , a great ape, exhibit a "solitary" pattern or social structure. Smith correlates similarities between these two primates and points out that such comparative analysis has not been utilized previously. He further posits new questions which could be followed in field research in this area.
The purpose of this paper is to bring together the wide ranging bits of information concerning contact between the people living in the Plains Region and those living in the Southwest Region of North America. Although a precise boundary dividing the Southwest from the Plains cannot be drawn, the break between the subsistence patterns and major cultural trends of each area is quite evident. As Wedel (1950:106) points out, "so far as archeology is an indication, there is surprisingly little direct evidence of Pueblo in the material culture of subsistence economy of the historic Plains Tribes."

Contact and influence between areas can take many forms. It could be migration of an entire population, movement of a single individual carrying cultural traits, trade, diffusion brought about by simple contact and awareness of how another group does things, warfare such as conquest or raiding or by competition and population pressure between groups. A major effect might also be seen through movement of an individual who transmitted one of the decimating diseases introduced by the Europeans. To identify where and to what extent any of these factors are operating is very difficult with the present state of knowledge. Again to quote Wedel (1950:100) "the area is vast! the time span long! and the available information still far too sketchy and uneven."

With this in mind! the direction of this paper will not be to evaluate the exact nature of contact, but instead to show what evidence is available, and what general trends and changes over time can be identified.
ARCHEOLOGICAL EVIDENCE

Paleo-Indian Contacts  At the earliest time levels of known human occupation, culturally similar groups appear to have been present in both the Plains and parts of the Southwest. Wormington (1957:21) identifies the occupants of much of the Southwest, especially the eastern portion, as paleo-eastern big game hunters with close ties to similar groups on the Plains. This similarity occurred in both tool types and subsistence patterns. Judge (1973) also cites definite Plains connections for paleo-Indians in the central Rio Grande Region.

Evidence for specific movement between the regions, at this early date, includes chert, apparently from the Alibates Quarry in the Texas Panhandle and from several Clovis and Folsom type sites in New Mexico (Lapidary Journal 1966:1118). Evidence for movement in the other direction is shown by obsidian from Area 1 at the Lindenmeier Site in northeastern Colorado. This material has been traced to a source in Central New Mexico (Wilmsen 1974:114).

The LaBolsa Site in the Galisteo Basin, about twenty miles southwest of Santa Fe, New Mexico, is described by Honea (1967:571 as proto-Archaic, with a date of about 7,000 to 6,000 B. P. He argues that this group is ultimately rooted in the Agate Basin groups of the Northern Plains. Whether or not this is the case, this groups appears to have Plains ties.

Archaic and Early Ceramic Contacts  Some of the best evidence of contact, at Archaic levels, comes from two sites near Denver, Colorado, as described by Irwin and Irwin-Williams (1959, 1961, 1966). These are the LoDaisKa Site and the Magic Mountain Site. They describe Complex "D" at the LoDaisKa Site as a manifestation of the Desert Culture, as described by Jennings. They give its closest ties as being to Danger Cave, Ventana Cave, and the Uncompahgre Complex. The Magic Mountain Site contains a similar group in its Apex Complex. They feel that the external ties of the two groups lie directly with a series of related preceramic cultures from the northern Southwest. Possible material ties to the Southwest from these sites include olivella shell from Magic Mountain, obsidian from an unknown source at LoDaisKa, and chapalote maize, very similar to corn of the same age from Bat Cave, New Mexico, also from LoDaisKa. A carbon 14 date from Complex "D" at LoDaisKa is about 2800 B.C.
In southeastern Colorado some additional Archaic level sites on the Chaquaqua Plateau are described by Campbell (1969:365-377). Material at these sites which may have come from the Southwest includes olivella shell, one obsidian flake from a level dated A.D. 200-45 and seven obsidian flakes from a level dated A.D. 450-750. This last level also has structures which Campbell feels resemble those of the Los Pinos Phase in the Southwest dated A.D. 1-400.

Many Woodland sites in the Palo Duro, Canadian and Red Deer Drainages of Texas contain some plain Brownware Mogollon pottery, tempered with crushed andesite, from the Sierra Blanca Region of New Mexico (Lintz 1979:173). Radiocarbon dates of the pottery-bearing levels at Deadman's Shelter in the southern Texas Panhandle are A.D. 120-710.

Wedel (1950:103-110) points out Southwestern elements were present in Harrington's (1924) Ozark Bluff Dweller Caves and also in some Oklahoma Panhandle Caves (Renaud 1930). Wedel feels that these "hint at old connections but resist fruitful discussion."

In New Mexico, Hall (1944:66) describes the Rosa Phase, ca. A.D. 700-900, as marginal Anasazi. However, he feels that a number of traits found there have their origin to the east in the Plains although the evidence is insufficient for any positive conclusions. This evidence includes traits such as stockades around a large simple pithouse, earth storage pits and scored pottery.

Two sites in southeast Colorado mentioned by Campbell (1969:355), have HarinosadeOcho maize. This is believed to be of probably Southwestern origin at levels associated with the A.D. 900-1050 Pueblo expansion.

Mera (1935, 1938) has discussed a curious similarity between conical bottomed pottery of the Largo-Gallina Complex in Northern New Mexico (A.D. 1100-1300) and certain Eastern Woodland ceramics.

Late Prehistoric Contacts. Plains contacts in the late prehistoric period began to appear along the northeastern edge of the Southwest Region. McGregor (1965:25) says that Pueblos Indians living in the Pecos and Taos Pueblos (see figure 1) are obviously descendants of the Anasazi with a history traced back to the Basket Maker Peoples in the Plateau section of the Southwest. This also, however, is where the most Plains influence seems to show up. This
New Mexico, 1000-1700, based on a map from Apache, Navaho, and Spaniard, by Jack S. Forbes. (Kenner, 1969: 13)
probably could be expected due to the frontier position of these pueblos. Kidder (1923:43-44) says that the many stone tools found at Pecos, with raw material and style indicating a Plains origin, first became common in late Glaze IV Period, about A.D. 1550, and increased during the next one hundred years. These include various tools connected with hunting and the dressing of skins. This is during the historic period when the Spanish were affecting trade, but two of the finest specimens at Pecos come from the Glaze I Period. Several axes of schistose fibrolite were also found in the Pecos Ruin according to Wedel (1961:154) and he quotes Witte (1947) as suggesting the Canadian Valley in Texas as the likely source of the raw material.

Jennings (1956) notes that there are several other early traits which are suggestive of Plains influence although they offer no actual proof of contact. One of these traits is the grooved axe which has a long history in eastern areas of the U. S. It was present on the eastern borderlands prior to its first appearance in the Southwest which appears to be during the Snaketown Phase of Hohokam about A.D. 400-500. This was a 3/4 groove variety. The earliest known Anasazi appearance is about A.D. 600 and the earliest in the Mogollon seems to be about A.D. 1150-1200. There are also polished stone, perforated bone and incised bone tube traits as well as others which have varied but similar counterparts in eastern areas. Jennings (1956:102) also indicates that the tubular tobacco pipe could have eastern origins and mentions a Plains pottery sherd which was identified as Upper Republican by Griffin from a Gallina site. Similarities in the gross form of projectile points from the Southwest, Plains and Central Mississippi Valley over time are shown in Figure 2.

Wedel (1961:152) notes sites in the Chama Valley of north central New Mexico where a locally made pottery "of distinctly nonpuebloan kind," known as Potsuwi'i Incised, appeared after A.D. 400. He says that style and technique have much in common with that of the late prehistoric pottery in the Mississippi, Ohio and Missouri River Valleys as well as with those from early historic sites in eastern Nebraska and Missouri River Valley of South Dakota. Associated with the Potsuwi'i Incised in the Chama sites are hide dressing tools similar to those of the Central Plains. These include a dehairing tool, made from the leg bone of a deer or other large mammal, and a drawknife-type hide scraper made from the ilium or pelvic bone of a similar animal. Both of these types are found in Kansas City Hopewell sites dated about A.D. 400 or earlier. The first also occurs in Upper Republican sites which are contemporaneous with the Chama sites.
Sources of specimens figured:

Source
Judd 1951, Pl. 73 L.
Roberts 1932, Pl. 59 b
Ibid., Pl. 58 a.
Judd 1954, Pl. 72 a
Titterington 1933, Fig. 13
Ibid., Fig. 12
Ibid., Fig. 10
Ibid., Fig. 9
Ibid., Fig. 7
Ibid., Fig. 13
Ibid., Fig. 13
Roberts 1931, Pl. 39 f
Ibid., Pl. 39 c
Ibid., Pl. 39 b
Ibid., Pl. 30 c
Scully ID33 (figures not numbered)
Morris 1939, Pl. 125 d
Ibid., Pl. 126 e
Geber 1943, Fig. 1 c
Ibid., Fig. 1 d
Ibid., Fig. 1 e
Maxwell 1951, Pl. 30
Schultz and Spaulding 1948, Pl. 29 f
Bell and Baerreis, Pl. 9, 10
Kivett 1949, Fig. 69 a
D. Morse collection, Steuben Village
Strong 1935, Pl. 24, 2
Kivett 1953, Pl. 23 a 3
Skalko 1949, Mound 38
Maxwell 1951, Pl. 25, "row 1"
Morris and Burgh 1954, Fig. Ol, Jt
Ibid., Fig. 81, H
Ibid., Fig. 81, 4m
Wheat 1935, Fig. 9
W. dell 1913, Pl. 12h
Ibid., Pl. 12 f
McKinney 1954, Fig. 1, 4
Ibid., Fig. 1, 10
Bell and Baerreis 1951, Pl. 5, 1
Ibid., Pl. 5, 2
Duell 1952, Pl. 72 d
Ibid., Pl. 90
Griffin and Morgan 1941, Pl. 32, 2

Period
Great Pueblo, New Mexico
Great Pueblo, New Mexico
Great Pueblo, New Mexico
Middle Mississippi, Illinois
Middle Mississippi, Illinois
Middle Mississippi, Illinois
Middle Mississippi, Illinois
Middle Mississippi, Illinois
Developmental Pueblo, Colorado
Developmental Pueblo, Colorado
Developmental Pueblo, Colorado
Developmental Pueblo, Colorado
Late Woodland, Colorado
Late Woodland, Colorado
Late Woodland, Colorado
Late Woodland-Mississippi mixture, III
Late Woodland, Missouri
Modified Basketmaker m.M.III), N. M.
Modified Basketmaker m. M. III), N. M.
Modified Basketmaker (M. M. III), N. M.
Kansas Hopewell (N. W.)
Late Woodland, Oklahoma
Plains Woodland, Nebraska
Late Illinois Hopewell, Illinois
Signal Bulle II, Nebraska
Plains Woodland, Nebraska
Late Woodland, Illinois
Late Woodland, Illinois
Basketmaker II, Colorado
Basketmaker II, Colorado
Basketmaker II, Colorado
Mogollon 1-3, New Mexico
Kansas Hopewell, Kansas
Missouri Hopewell, Missouri
Missouri Hopewell, Missouri
Oklahoma Woodland, Oklahoma
Oklahoma Woodland, Oklahoma
Illinois Hopewell, Illinois
Illinois Hopewell, Illinois
Illinois Hopewell, Illinois

Figure 2.
There is also evidence of contact on the Plains surrounding the northern and eastern boundaries of the Southwest during this period. On the Chauquaqua Plateau in southeastern Colorado during the period A.D. 1000-1300, Campbell (1969:IV) feels that the people there were influenced by the cultures of the adjoining Southwest although not directly related to them. In the later levels there was micaceous ware which he felt could be related to Taos or to the Dismal River People (Campbell 1969:116). There was some Puebloan trade ware in southeast Colorado, too (Campbell 1969:355). Dated types include three from the Chucharas Drainage which probably date around A.D. 1000-1300. On the Apishapa River there was Santa Fe or Taos Black-on-White from around A.D. 1300.

At the Pratt County sites on the Ninnescah River in Kansas there are turquoise beads, obsidian and pot sherds including Rio Grande Glaze III, and one piece of Biscuit "B" Black on Grey." These sites probably date between A.D. 1400-1500 (Wedel 1959:289, 505). In one Upper Republican site near Optima, Oklahoma, Black-on-White sherds were found that were identified by Mera as from the Pecos Valley in the A.D. 1300-1375 age range (Burnett 1945:68).

There is a considerable amount of evidence for contact in the Texas Panhandle, too. In this area there are groups that built many-roomed stone and adobe buildings which seem to indicate a Pueblo influence. In both their farming and their utilitarian cord-marked pottery, they seem to have ties to Plains groups (Lowie 1954:209). The best known of these sites are at Antelope Creek, Alibates, Saddleback and Ruin Number 55. Krieger (1947:141) lists a number of architectural similarities to the Pueblos but also points out the relationships to the Upper Republican Focus. Lintz (1978:49) also mentions similarities which may indicate trade with both Upper Republican and Southwest groups.

It appears that the Antelope Creek Focus began about A.D. 1200 (Lintz 1979:173). The appearance of sherds relating to the late Pueblo III and early Pueblo IV indicate trade with the Southwest around A.D. 1300-1450 (Lowie 1954:209) when this group apparently disappeared from the area. At least fifteen Puebloan ceramic types have been recorded from Antelope Creek sites but the architecture of the sites shares few traits with the sources of the pottery (Lintz 1979:176). Of the almost five thousand sherds found at these sites less than two percent were of Puebloan origin. Few of the artifacts made from Alibates-like chert, found at Pecos, were in the time levels corresponding to Antelope Creek Focus (Kenner 1969:5).
At the Alibates site, trade sherds included Lincoln Black-on-Red, Glaze A Cienguela Glaze-on-Yellow, Aqua Frio Glaze A and St. Johns Polychrome. All date in the A.D. 1200-1450 range. There were also turquoise, obsidian and olivella shell found at the Alibates Site (Lapidary Journal 1966:1124). Another site from this Focus yielded Santa Fe, Wiyo, Galisteo and Rowe Black-on-Whites. All four indicate A.D. 1300-1375 time period (Lintz 1979:175).

Lintz (1979:177) points out that the development of both Apishapa in southeast Colorado and Antelope Creek in Texas roughly coincides with a major Puebloan expansion east of the Sangre de Cristo Mountains around A.D. 1150-1200. This is also the time when Mogollon Brownware is replaced by Puebloan types as trade wares. He feels that this suggests that Plains populations might have been responding to major population shifts in the Southwest.

The brief expansion of farming peoples from the Southwest onto the Plains is shown by sites on the Llano Estacado at the heads of the Red, Brazos and Colorado Rivers of Texas. That these are Puebloan groups is shown by Puebloan handmills, projectile points common to the late Pueblos of central New Mexico, and ceramic types including Chupadero Black-on-White and Glaze, El Paso Polychrome, Lincoln Black-on-Red and Glaze I-III. Kreiger (1974:144) suggest this group was forced out onto the Plains by enemies. Wedel (1961:150) indicates the circumstances of occupation are uncertain and these sites may even be seasonal in nature. Kreiger (1947:147) also mentions five Puebloan sherds of Upper Gila types found with the Titus Focus in Texas which seem to date in the 1400's.

**Athapascan Movements and Interaction** One area where there is little doubt that people of the Plains were interacting with people of the Southwest is in the case of the Athapascan Peoples. The major representatives of this linguistic group include the Southwestern and Plains Apaches and the Navaho. The Apache are often referred to in the literature by many band names. These include Querechos, Vaqueros, Cuartelejos, Faraones, Jicarillas, Conejeros, Carlanas, Calchufines, Limitas, Natageas, Palomas, Penxayes, Lipan, Chiricahua and others (Dolores Gunnerson 1956:354). These groups spoke dialects of the Athapascan language which is remarkably similar to that of groups in the interior of Northwest Canada and Alaska (Powell 1891). There is little disagreement that these peoples are a fairly recent group of immigrants from the North. There are, however, many theories on the exact route or routes they might have followed. Suggestions
have been made for the Great Basin, the main Rocky
Mountain chain or the high plains east of the Rockies
as possible migration routes (Wormington 1947:105).
There is also a controversy over the exact arrival date
or dates. Some feel that they were in the Southwest as
early as A.D. 1200. Others feel that they did not arrive
until the early 1500's (D. Gunnerson 1956). The Navaho
appear to be the members of this linguistic group who
were affected most by southwestern cultural patterns.
Their culture seems to have absorbed a tremendous amount
from Pueblos who preceded them in the Southwest (Spencer
and Jennings 1965:318).

The Apache varied a great deal in their interaction
with Puebloan groups. Onate mentioned Apache who were
described as Pueblo dwellers (Hammond and Rey 1953:345,
484), and in 1719, Valverde described foothill Apache as
living in adobe houses in settlements of one to eight.
They also had ditches for irrigating their crops (Thomas
1935:110-133). The Plains Apache, on the other hand, seem
to have been entirely nomadic, but they traded with the
Pueblos and occasionally raided them. There are even re­
corded cases of the Apache forming an alliance with one
Pueblo to fight another.

To Dolores Gunnerson (1956:350) it appears that the
Apacheans were a moving force in the major increase in
Plains tool types at Pecos Pueblo in the early 1500's.
She speculates that although there was some trade with the
Antelope Creek Focus it was not very active because these
people did not need the Pueblos. They had their own corn
and pottery. When the nomadic Teya and Querecho arrived,
however, they did need the trade to get through hard times
and it was also very beneficial to the Pueblos who partic­
ipated. The Apaches apparently controlled strategic passes
in the Sangre de Cristo Mountains for a long time. This
gave them strong control over interactions between Plains
and Pueblo groups (James Gunnerson 1969a:24).

Most evidence would appear to support the theory that
the Apache, and probably the Navaho, entered the Southwest
area from the Plains. Dolores Gunnerson (1956:360) cites
historical reference to several expeditions to the Plains
by Navahos where they went both to Quivira and to fight the
Pawnee in their homeland. Such extensive journeys might
indicate a previous knowledge of the country. There is
also much discussion about the similarity of Dismal River
archeological sites on the Plains and the Athapascans
(Haskell 1971; Schlesier 1972; James Gunnerson 1960). The
Dismal River pottery strongly resembles utility pottery
at Taos, Picurís, and some other Upper Rio Grande Pueblos; the percentage that is micaceous, an Upper Rio Grande trait, increases from north to south in sites (Wedel 1959:593). There are also occasional finds of turquoise, obsidian, and glaze paint pot sherds at Dismal River sites as well as a similarity in location and type to ethnographically described Apache settlements (Wedel 1961:113). Although there is disagreement on details it would still appear that the various Athapascan groups were a major source of Plains-Southwest interactions, possibly acting as middlemen for contact between groups in the Southwest and on the eastern edge of the Plains, especially the Caddoan speakers.

The Dismal River research has also been tied into an area of less direct interaction between the Plains and the Southwest. The Fremont Culture in Central Utah shows several similarities to groups in the Southwest in such traits as figurines, bundles, maize, ball games and possibly cannibalism (Haskell 1971:115). It also has similarities to the Dismal River groups on the Plains. The Promontory Culture in northern Utah also shows some of these ties and may be a variant of the Fremont People (Aikens 1967). Whatever the nature of this relationship is, it does have importance for study as a possible indirect route for contact between the Plains and Southwest. While Fremont and Promontory Cultures are neither in the Plains nor the Southwest proper, they do provide a source of contact via the Great Basin and have caused a great deal of discussion (Wormington 1955; James Gunnerson 1956, 1969b; Aikens 1966, 1967; Haskell 1971). Shoshonean groups could have played a similar role in more recent times as a contact via the Great Basin.

**Protohistoric and Historic Contact** One of the more interesting sites from the historic period is located in Scott County, Kansas. This apparently was the site of El Quartelejo which was described by the Spanish. In the unrest preceding the Pueblo revolt of 1680, several families of Taos Indians fled to El Quartelejo on the Buffalo Plains. The Spanish sent Juan de Archuleta to bring them back just prior to 1680 (Wedel 1959:22). After the Revolt there were again Pueblo Indians who fled to El Quartelejo, including a group of Picurís who went there in 1696. In 1706 Ulibarri left Santa Fe to return these Indians (Wedel 1959:71). The Puebloans went to El Quartelejo to stay with Apaches who were apparently their earlier trading partners.
The site in Scott County appears to have many Dismal River traits, except for a number of items of Puebloan origin (Wedel, 1959:463). The Puebloan traits include architecture, rectangular slab-lined hearths, grinding troughs, shaft straighteners of steatite-like material (very similar to ones found at Pecos), irrigation ditches, tobacco pipes strongly reminiscent of late Rio Grande styles, olivella shells turquoise, obsidian, and Puebloan ceramics. These include Tewa and Pojoaque polychromes, "Kapo" Blackware, late Redwares and Rio Grande culinary wares. The ceramics indicate an A.D. 1600 to 1700 date.

Further east, Puebloan sherds are often found in Great Bend sites of the protohistoric and historic periods (see Figure 3). At sites in Rice County which Wedel (1942) indicates may have been visited by Coronado, there are turquoise beads, obsidian, items of European manufacture and sherds of late Rio Grande Glazes which date about A.D. 1525-1650. One sherd is specifically identified as Chupadero Black-on-White (Wedel 1942:6). In other Great Bend sites of the same era, there are similar finds of Puebloan ceramics. They include the Saxman Site on Cow Creek, some sites on the Little Arkansas River, the Country Club Site at Arkansas City and sites near the great bend of the Arkansas River. During this same time period at Pecos, there are many tools indicative of the Great Bend Sites such as chipped end scrapers, cancellous bone paint applicators, numerous cap hide grainers and others (Wedel 1959:583).

Recent work in Oklahoma has shown other examples of contact. On the Kaw Reservoir in northern Oklahoma, obsidian flakes of undetermined origin have been found, probably of Woodland age (Rohn 1981).

Farther south Baugh and Swenson's (1981 a & b) recent publications on protohistoric exchange systems deal with the Edwards I and Taylor Sites in Beckham County, Oklahoma. Obsidian flakes from the Edwards I Site were analysed by X-ray flourescence and compared to sources in New Mexico, Colorado, Arizona and Utah. Two types were found. Twenty-nine items were found to be from the Jemez Mountains in northern New Mexico, 600 km west of the site. A single item was found to be from still farther west in the San Francisco Mountains of northern Arizona (Baugh and Swenson 1981a:4). There were also turquoise and micaceous pottery found which was indigenous, but possibly influenced by techniques in the Southwest such as firing, decoration and smoothing of the interior (Baugh and Swenson 1981b:84). Southwestern sherds made up 5.16%, or 191 sherds, of the ceramics at the Taylor Site. Pottery from Pecos was predominant at both sites. The sherds from Taylor included one from Gran Quivira and five from Taos or Picuris.
Those from Edwards I included one from Kuaua, one from San Lazaro and a Hopi Brown-on-yellow Skiyati ware. There was also a Vadito Micaceous from PicurIs or Nambe. The sherds and obsidian from northern Arizona may be the result of indirect contact since sherds found at Pecos and PicurIs show trade with the Hopi (Baugh and Swenson 1981a:5). Both sites in Oklahoma also show trade with the Southwest region at the same time periods (Baugh and Swenson 1981b:99).

Baugh and Swenson (1981b:83) also quote Krieger (1946: 237-241) as giving evidence for trade across the Plains. This consists of neck-banding in Caddo country which closely resembles the Southwestern technique of corrugation. He suggests certain shouldered and carinated bowl styles found at Pecos were borrowed from the styles of the Texarkana Focus Caddoan groups in the early 1500's. Krieger (1947:145) also mentions a Plains site at Spanish Fort on the Red River of Texas which has Tewa Polychrome sherds and dates in the mid-1700's.

ETHNOGRAPHIC EVIDENCE OF CONTACT

There are many early references to interactions between native residents of the Plains and Southwest. There is archaeological evidence of Apaches at Pecos Pueblo (Gunnerson and Gunnerson 1970). When the first Spaniards arrived there in 1541, they reported that Querechos and Teyas of the Plains traveled to the Pueblos to trade hide robes and meat for corn. Kessel (1979:k34) notes that the Apache were at Pecos every year at harvest time to trade and some spent the winter beneath the walls of Pecos. In 1598 Zald1var met Vaqueros returning from Taos and PicurIs to the Plains. They had traded meat, hides and other items for cotton blankets, maize, pottery and some small green stones (Wedel 1959:70). In the 1650's Fray Alonso de Posada reported Apaches brought robes and captive Indians from Quivira to trade for horses. He added that they took particular care to maintain peace with the Spaniards in order to preserve an outlet for their dressed hides (Kenner 1979:16). Fray Augustin Vetancourt wrote, before 1700, that more than five hundred Apaches were coming annually to Pecos with their laden dog trains to trade for corn, varicolored stones and tobacco. There are also reports of Plains Indians bringing salt, tallow and other items to trade and sometimes exchanging or ransoming prisoners during their visits.

Kenner (1969:18) reports that at times there were specific trade alliances between groups, with the Siete
Rios Apache going to the Tompiros, Apache Del Acho going to Taos and Faraones, who were probably the same as Vaqueros, going to Pecos as examples of this. At one time the Tompiros Pueblos were called the Jumano Pueblos by the Spanish because so many Jumano Indians went there to trade. In the 1580's Espejo described trade between the Acoma and Cochito Pueblos and the Apache (Hester 1962:25) and apparently the Navaho (Hester 1962:58) and even the Zuñis and Hopis of the western deserts had plenty of buffalo hides for winter wear (Kenner 1969:11).

The Comanches made their first recorded visit to Taos for trade in 1707 and were still reported to appear annually in 1736 (Kenner 1969:28). After the Spanish had gained control, annual summer trade fairs were held at Taos, Pecos and Picuris in which the Plains Tribes participated (Lange 1979:202). Trade was not always limited to the area of the Pueblos either. In 1693 there was a report that the leaders of Picuris had gone on an important journey to the Buffalo Plains to barter (Kenner 1969:20). Pecos also sent out traders onto the Buffalo Plains according to Castaneda (Kenner 1969:9). Another report of the Tompiros stated that they were afraid to visit the Plains at that time, warning that the followers of the buffalo would kill any who trespassed on their domain (Kenner 1969:10).

Many further details of trade in historic times are listed by Kenner (1969), Thomas (1940) and Lange (1957). The economic aspects of this trade appear to have had far-reaching effects. Kroeber (1928:393) says that "Taos, the frontier settlement, is counted Pueblo and essentially is such: but in material culture and dress it is half Plains." Jeancon (1960) points out that Taos and the Jicarilla Apache had many points in common, citing the genesis myth of each example. There is evidence that they had an alliance and intermarried. Kenner (1969:9) cites evidence that Pecos used their military power to become a center of trade and Kessel (1979:159) states that they became dependent on the trade goods bought by the Vaqueros. Evidence that even at first European contact, this interaction was well developed is shown by the presence of Quiviran and Harahay Indians at Pecos when Coronado arrived. These were called Xabe, Sopete, and the Turk (Kessel 1979:21-22). The very fact that the early Spaniards could find guides able to communicate with as many groups as they found on the Plains is evidence of a certain level of contact. On the DeSoto Expedition in eastern Texas at Guasco in 1541, they found "turkoises and shawls of cotton which the Indians signed, were brought from the direction of the sunset" (Baugh and Swenson 1981b:83).

It must be remembered, though, that the relationships between these groups were not always friendly. Castaneda
(Wedel 1961:103) reported raiding in the Rio Grande country by the Teyas, that they had destroyed several towns near Pecos sixteen years earlier and had even besieged Pecos unsuccessfully. Kidder (1962:83) attributes the decline and final abandonment of Pecos to the arrival in the Southwest of the Comanche, a Shoshoean linguistic group particularly hostile to Pecos.

In the early 1700's it was common for the Pawnee to raid in the Southwest (Dunbar 1910:405) and some have argued that cultural parallels indicate a much earlier contact. Linton (1926:465) suggests that the Skidi Pawnee's "Morning Star Sacrifice" may have had a dual origin with part coming to them by way of the Mississippi and part by way of the Southwest. Parsons (1929:642) lists many similarities between Pueblo and Plains ritual practice. She states, "When cultivation of maize was acquired by the Pawnee, it carried ideology and ritualism similar to the Pueblo." Underhill (1954:650-51) specifically points out the four corn groups of the Pawnee are similar to Isleta; a mother corn of the Pawnee, like the Keresan Iyatiko; and the way the Pawnee divided their sacred bundle into summer and winter moieties, similar to the eastern Pueblos. Parsons (1929) also notes groups such as police groups and warrior societies which occur in parts of the Southwest and are well known Plains traits.

An example of contact from even farther north on the Plains comes from the journal of Andrew Garcia (1967). While in eastern Montana in 1878, he mentions meeting an old Blackfoot Indian named White Grass. White Grass told Garcia (Garcia 1967:165) of his first time on the trail as a warrior, "long, long ago." He went on a raid for horses to a place "where cactus is a tree and the ground is dry." Along with many other Blackfoot warriors, "started out afoot, in the Spring when the grass got good... in the land of the Shoshones, their enemies, they soon surprised some camps and got horses to ride. They stayed with the Utes all Winter. In the Spring a large party of Utes, including the Blackfeet, started south on the war trail. It was not long until they came to the land where the Injuns lived who had strong tipis, with no doors. They went on top with a ladder, which they pulled up so no one could get at them. Then they went down in their tipi through a hole in the top."
LOCATIONS OF SOME SITES DESCRIBED IN THIS SECTION

FIGURE 3

(Baugh, 1981b:94)
The Blackfeet spent the next winter with the Utes again and returned to Montana the next Spring.

Another ethnographic account which gives an excellent insight into the nature of some contact is the story of Juan Sabeata (Kelly 1955). Juan was a chief of the Jumano and Cibolo Indians from at least 1683 to 1692. These Jumanos were a Plains buffalo group who had been in Texas well before 1500. Sabeata made at least eight journeys across almost the entire width of Texas during the summer months (see Figure 4). His was probably not the only group of bison nomads who developed a profitable trade between the Southeast Plains and the Southwest either. He was a great gossip and a major trade item for him was not in material goods but in news. Sabeata gives a unique look at "word of mouth" diffusion and such nonmaterial transmission of traits could, at least in some cases, account for large blank areas between similar cultural traits in North America.

Another way to look at ethnographic information is to look for long lasting routes of diffusion. Wedel (1950:101) identifies three principle historic routes of travel between the Plains and Southwest Regions. These could provide clues to earlier movements. The best known of these is the Santa Fe Trail. It was an excellent route from the upper Rio Grande Pueblos to eastern Kansas with suitable camping spots at five to thirty-six mile intervals. Coronado's band returned along this approximate route on their journey of 1541, so it may well have been in use prior to that time. A second route followed by Josia Gregg (1851 II:136) led eastward from the Santa Fe district and down the Canadian River. The third route which had been followed by early Spanish explorers and soldiers went up the east front of the Rockies to the Arkansas River near Pueblo, Colorado.

A number of studies have also been done of the diffusion of the horse northward after it was introduced in the Southwest by the Spanish (Wissler 1914; Haines 1938; Ewers 1955; Jacobsen and Eighmy 1980). This diffusion may have been by trading or theft, but the routes (see Figure 5) could still have importance in studying earlier diffusion of traits in either direction.

Another trait introduced by the Spanish, which also very likely diffused from the Southwest and spread very rapidly across the Plains and beyond, is the watermelon (Citrullus lanatus). This plant apparently spread so rapidly that many early explorers from the East recorded it as a native crop of North America. The course and speed of its diffusion has been studied by Blake (1981). Similar studies of European trade items, as they spread out from the Southwest or into it, could also give insights.
Figure 4

Figure 5
FIG. 6. Schematic diagram of population movements in northeastern New Mexico in late prehistoric and early historic times, according to Wendorf (1960).

Figure 6
Wendorf (1960) has mapped and described the major routes of movement, both of peoples and traits in north-eastern New Mexico along the Plains - Southwest border. Population movements are shown in Figure 6.

Many theories have been given on the effects of Plains - Southwest contacts in all aspects of life for the groups involved and on the effects of other factors on the nature of contact. Kelly (Kenner 1969:9) suggested that drought conditions may have caused a shift from trade relations to war when Plains Indians who were dependent on the trade found that the Pueblos had little to trade because of the drought. This may have left them little alternative but to raid.

Wedel (1950:100) cites the arrival of more warlike Plains tribes on the Southwestern frontier in the early 1700's as a possible cause of the sharp decrease in trade interactions at that time. There are also many other theories which explain the migration or disappearance of various Puebloan groups as a result of harassment by nomadic raiders, often the Athapascans. Jett (1964:290) lists Gladwin as a strong supporter of the idea that the arrival of the Athapascans profoundly affected the lives of the earlier inhabitants of the Southwest. Linton has argued against this because of the superior numbers and organization of the Puebloans, but others point out the vulnerability of the crops upon which the Puebloans were dependent (Jett 1964:290).

CONCLUSION

In order to limit the extent of this paper, a few lines of evidence which at the moment seem less fruitful than those presented have been left out. These areas include physical anthropology, comparative linguistics and comparative kinship analysis. A good summary of the evidence from these areas is given by Lange (1953:212:226).

Although not enough is known about most of the Southwest - Plains contact to describe the full interaction that was taking place, there are some trends that seem to stand out. One is that, although a relatively obvious cultural boundary existed, there has been a great deal of interaction across that boundary far into the past. Some contacts may not have been direct, but simply passed from one group to another by a series of lesser contacts or possibly by word of mouth. In addition to the many types of evidence given here, there is a distinct possibility that, at times, fairly vigorous interaction may have taken place which left little
in the way of material remains for the archaeologist to find. It would seem possible for trade in items such as salt, maize, meat, hides, slaves or simple information to be carried on at a fairly large scale with little material residue or visible change in the culture involved.

It is also possible that two groups with life styles as diverse as the dog transported nomads of the western High Plains and sedentary irrigation agriculturalists of the Southwest found little of value in each other's cultures, other than food and self-transporting slaves or animals. Many nomads would have little desire to transport heavy and fragile ceramics or build massive houses and the Puebloans may have found equally little use for buffalo processing tools or small tents for which repair and replacement hides were not easily obtained. There are exceptions, of course. Sometimes the two groups did find use for the other's tools as is shown by the examples in this paper.

There are also sedentary people on the Plains, though seldom as far west as the High Plains bordering on the Southwest, and nomads such as the Apache who lived in the Southwest. The boundary between the Southwest and the Plains would seem to have been both cultural and geographic. The significant boundary is cultural but the culture is never entirely free from the influence of environment. Geography influenced two very different life styles which in turn reinforced the geography to divide these two areas. The boundary could be crossed, often with major impact on both sides - sometimes with favorable economic impact in the form of trade - sometimes with unfavorable population pressures and sometimes with the destructive impact of warfare. The boundary maintained itself, except for small shifts in its geographic position, with each life style continuing to dominate its respective side. The dichotomy must have existed at least since agriculture became established in the Southwest and possibly before. It seems Southwestern contact with sedentary groups farther east on the Plains should have resulted in more cultural blending of the two similar life styles but this apparently did not happen. Possibly this was because the contact was usually not direct, but was via nomadic groups who traded in both directions.
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PUBERTY RITES FOR THE SINHALESE FEMALE

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The life changes in the developmental processes of humans require a high degree of social and psychological adjustment. Cultures around the world have evolved ceremonies and rituals associated with these changes. The culture under study, the Sinhalese of Sri Lanka, have cognition of the predictable crises and developmental rhythms that children go through to become an adult and have developed a ritual to mark the physical maturation point of a female.

The ritual is seen as a psycho-social preparation of the female, to help prepare her to deal with what she has to cope with in the future as a biologically mature female. Additionally, the ritual helps the individual to be culturally conditioned to understand and manage the behavioral expectations for a sexually mature female. The recognition of female sexuality is portrayed by significant details in the ritual in that her roles of childbearing and motherhood are connected with the occurrence of menstruation. Throughout the ritual there is a strong underlying theme of welcoming the girl into the adult female domain by her immediate family and friends.

THE ASTROLOGER

A smiling female clerk employed by the High School escorts a thirteen year-old girl to her home in a taxi. She pays the taxi driver and carefully helps the girl out of the vehicle. The girl nervously clutches a portion of her well-starched, pleated-skirt white dress which has a spot of blood on it. She walks to her door and is met by her mother who gives her a gleaming smile as she speaks to the clerk. The girl sits quietly and shyly until the clerk is treated to a hot cup of tea. She is asked by the mother the exact time she discovered that she had menstruated. Leaving the girl in the company of the school clerk, she runs to her neighbor to tell of the good news that her daughter indeed has come of age and that she is the mother of a "big girl," and she asks the neighbor to stay with the girl until a relative comes. The mother then collects her hambiliya, a little purse which is always carried by a woman in the folds of her saree.
She hurries to the family astrologer, tells him the good news, including the time and place of the event, as well as the color of her daughter's dress while giving the girl's horoscope which she has brought along. The astrologer takes his time to refer to his well-thumbed books, ola leaves,1 charts, and makes some calculations while muttering to himself and reading aloud. He takes a piece of paper, and draws an astrological chart. The lady strains her neck from her chair and eagerly listens. The man asks her the approximate time of menstruation and proceeds to give a lengthy description of the girl's future, the kind of adult she will be, the time of marriage, the influence of her life on the parents, siblings and her health. He gives advice so that care will be taken to shield the child from negative effects due to her time of birth and to help maximize the positive effects of her time of birth. He also writes down the auspicious time for bathing the girl. The mother says that her high school examination is close by and that she cannot afford to miss school for too long. So the date for the ritual bath is re-calculated for another auspicious day. The lady thanks the astrologer,2 wraps a few rupees3 into a betel leaf4 and gives it to him. He bows his head in acknowledgment and without unwrapping the leaf places it in a drawer. On her way out the lady meets the wife of the astrologer and invites her for the pubertal bathing ritual of her daughter.

THE DHOBY LADY

She then hurries home to attend to the myriad duties that await her. She sends a message to the laundress, or dhoby5 through a person working in the house. The worker is asked to inform the dhoby of her daughter's pubescence. The dhoby arrives with clean white sheets for the girl's bed and a white dress, usually similar to the school uniform. Hereafter, until the day of the bath, daily the dhoby will bring a clean sheet and a white dress for the girl. The dhoby is presented with all the garments the girl was wearing when she menstruated including her jewelry. These items are considered to contain kili, a contaminant that is supposed to be around a woman when she menstruates. The donation of the total apparel, including her ornamentation, symbolizes the renunciation of her young girl's role. Thereafter, in seclusion she has a brief preparatory period for her transition. After the ritual bath she will be richly dressed in new clothes with much gold ornamentation as she steps into her new role of a pubescent female with a new identity.
The girl is now secluded in a room away from the normal traffic of the house and will go out only to the bathroom. She will wear a menstrual napkin or a diaper which is a square piece of material folded in a pad-like fashion. These are washed or disposed of carefully as menstrual blood is considered powerful in various practices involving spirits. The concept of hygiene while menstruating could have been instilled into the girls through fear of the spirits as most taboos and fetishes reflect the need for obedience in men and women.

The reason for secluding the girl is to protect her against evil spirits which can enter her body and cause her mental faculties to be affected. Some object made of iron is kept near the girl so that the evil spirits will not do any harm to her. The girl will carry this object even when she walks to the bathroom and it gives her a sense of security and confidence that the spirits cannot touch her. Female relatives and friends will keep visiting her while she is in exile from the rest of society. The jovial conversations center around the absurd situations in which other females found themselves when they menstruated for the first time. The conversations are dotted with important messages which help her to anticipate a different kind of behavior expected of her as a young adult, her family honor being dependent on her virtuous behavior.

The girl is not expected to speak to any males who visit the house except her father or her immediate brothers who discreetly avoid her so as not to embarrass her. The father now has to come up with extra money to spend for the celebrations connected with the puberty rites which are performed only for the female gender. The emphasis of the menstrual ritual is on the bathing of the girl at an auspicious time. The ritual conceptually includes linking with nature, to create an awareness of the biological events of being female and the cultural norms to which she must adhere. After puberty, she will no longer be able to visit her friends unescorted and will never obtain permission to spend a night away from her family.

**PREPARATIONS FOR THE FIRST BATH**

New clothes are tailored for the pubescent girl. New gold jewelry is ordered from the jeweler. Fine table cloths, silver utensils, and the best crockery and cutlery are brought out from their storage. The house may be painted anew and new drapes hung. Special sweetmeats are
prepared for the great day. There is a festive air for a week or more with rabana playing by the village women and men.

Added to the list of new purchases will be new baked earthenware utensils to pour water to bathe the girl and a trough to collect the water. Saucer-like earthenware lamps with small spouts containing wicks are also purchased. A coconut picker is given an order to bring the inflourescence of the coconut palm in order to decorate the entrance to the house. Until the day of the ritual bathing, the girl's daily diet consists of very bland food. It is believed that her body is undergoing tremendous change at this time and cannot cope with rich food until the mind and body have conditioned themselves to the new physiological change. Her diet will consist of vegetables, lentils, and rice and will be free of fish, meat or fried foods, fried foods being considered to attract spirits. Her food is prepared especially for her, using only the third milk squeezed from scraped coconut.

Special traditional food is prepared for the day of the ritual bathing. The rice, which is prepared for every festive occasion, is known as "milk-rice." This is reddish-brown rice slow-cooked in rich coconut milk. It is quickly spooned out onto a large china platter and patted down with a clean banana leaf to give it a special subtle flavor. The mixture easily lends itself to being closely packed to any shape and usually is cut into diamond-shaped pieces. The sweetmeats consist of kavurn, a mixture of rice, flour, cardamom, caraway seed and honey. Spoonfuls of the mixture are dropped into a fry pan and a midrib of coconut leaf is inserted into the middle of the cookie-like cake while the oil is splashed onto the cake. Many other sweets will be prepared with mung seed flour, sugar, coconut and honey; kokis, made from rice flour and thick coconut milk is made into various rosette shapes. The sweets keep for about two weeks without refrigeration and therefore are made earlier, in contrast to milk-rice, fish and meats which are prepared the same day of the celebrations. The food is spiced with the addition of exotic spices for which the country has been known for centuries.

THE DAY OF THE BATH

The ritual bathing takes place in the early hours of the morning. The temperature in most parts of the island being eighty degrees on the average ensures a comfortable bath. Before the bath, the girl is taken to look at a
tree that exudes a milky sap when cut. The milk signifies richness of the occasion as well as a symbol of fertility and purity. The girl then walks into the bathroom, accompanied by her mother. She stands on a mat woven out of dry coconut leaves on which has been sprinkled unhusked rice. Unhusked rice, having the potential life for sprouting, is a symbol of fertility for the Sinhalese. The water trough is sprinkled with fresh white jasmine flowers, known for their fragrance and signifying purity. The girl sits on a low wooden stool with a cloth wrapped around her acting as bathing apparel.

The dhoby plays an important part in the ritual bathing. She pours seven potfuls of water with the new earthen pot, or kalaya. The girl then takes a bath and the eradication of kili is thought to take place at this time. At the end she is asked to dash the pot on the ground. This practice may be akin to the dashing of the wine glass after toasting a person, in that to no better use than this would the vessel present itself. The mother then helps the girl dry and dress herself.

The girl now dresses in the traditional clothes, the saree, which consists of six yards of flimsy material, a long underskirt, and undergarments. A tight blouse is worn showing the midriff. She is adorned with gold earrings, necklaces, and many gold bangles. She will be given ancestral jewelry by her grandmother. The girl then walks around the back of the house and enters the house through the front door, similar to the entrance to her new role as a menstruating female. The doorway is decorated on either side with flaming oil lamps placed on decorative pots. The pots also contain the cascading yellow flowers of the inflorescence of the coconut palm. As the girl enters the doorway, an older male will hold a husked coconut in front of her and give it a rap with the blunt edge of a knife. If the coconut splits into two equal halves, with a little water remaining in either shell, it is read to be a good omen about her future life of prosperity balanced with good health. Sometimes a coconut will rudely split into a very small part and a larger part that stays up while the smaller will roll off and lie on its face. The half of the coconut with the three indentations is called the female side and the other male. If the female half turns out to be bigger and faces upwards, the girl will have more daughters than sons and vice versa. If both halves are equal size and facing upwards, an equal number of children from both sexes are believed to be the result.
If both halves face downwards, it is an indication of barrenness. The reading of the coconut is not taken too seriously, but it is adhered to as an old custom from an age when there was little control by man over his environment.

The girl then walks demurely into the room and sits on a couch placed in a central place in the living room. This marks the beginning of the all-day festivities. The family begins to serve the prepared elaborate breakfast with warm hospitality. The guests sit and await the trays laden with food. The girl is offered a cup of tea, milk-rice, and some sweets. Her grandparents have arrived from their home and will act as hosts, looking after the entertainment of the visitors who are already present. Hospitality to a visitor is an all-important custom of the Sinhalese culture. Refusal of more food is never taken seriously and more food will be placed on one's plate by the eager hosts. The beverage preferred in the country is hot tea drunk with milk and sugar. There will be many females at work in the kitchen pouring tea, cooking lunch, and washing dishes. A temporary structure which serves as a cooking place has been constructed. This has a wood-burning hearth with facilities for large-scale cooking.

The dhoby's tasks are now over. She is now expected to partake of breakfast and leave, the status of the dhoby not being high enough to mingle with the other guests. She is, however, very satisfied as she can collect all the new utensils that were used and she can anticipate other gifts, such as food for her family and money. She may sometimes bring a small hand cart to transport the gifts to her home. The gifts she receives are an indication of wealth and status of the celebrating family and she will brag to other village women of how much she received in goods and money. The family, therefore, try not to save on this expenditure, mindful of the reputation they earn in return! The weeks of preparation as well as the day's events are managed and executed by women. The mother of the girl makes all the decisions for the ceremony and festivities. The father in only a concerned provider of funds and may only help when requested to do so.

Some of the visitors leave after breakfast, but some remain for lunch. Those that leave present the girl with gifts, such as a piece of fine yardage, money, a piece of golf jewelry or a gold C0ln. The "big girl" at this time is having a great time, with much attention showered on
her for menstruating - a natural consequence in her biological passage. She receives intense social support at this important milestone of her life and joyous welcome into the sisterhood, composed of menstruating females, which sets forth unspoken rules of behavior. They help her gain recognition and awareness of this inevitable reality and encourage her to conform to the cultural norms of staying a virgin until she is married. No one directly conveys these values to the girl. She is expected to learn by observation, inference, deduction, and imitation of the behavior of other females.

After the day of festivities, life returns to normal schedules although not for the "big girl." She is sometimes excluded from the most innocent liberties of visiting a friend or relative unescorted, although this is not strictly adhered to in modern times. She is expected to walk gracefully, not swinging her arms, keeping them close to the body. Her jet black hair is expected to be unshorn and kept in order by using purified coconut oil. She is expected to increase her participation in household work, cooking, preserving food and sewing. If, however, the girl is attending school or has elder sisters, these involvements are minimized and even postponed since the Sinhalese place a premium on education for both boys and girls and support financially and emotionally a promising bright child who does well in school.

The girl returns to school the very next day after her bathing ceremony. A teacher always can single out a girl who has come of age by observing the new gold chain around her neck, new earrings, gold bangles, and the cluster of whispering girls around her. She is now one of the "big girls" who have somewhat higher status than those who have not yet had the privilege of menstruating. She has had a pleasant social experience, with much support from her family; she has contributed to a happy occasion, for in fact, she has been the cause of the festivities; and she has been launched into a different social status in the cultural domain. She is now a young adult female with a new and strong identity.

CONCLUSION

It is seen that the puberty rite of the Sinhalese, which marks the first menstruation of a female, ensures that she attains a stable feminine identity of herself.
The informal communication with friends and relatives makes it clear that from here on her movements are restricted due to her vulnerability. She is expected to remain a virgin until she marries. Her rewards for remaining such are family and personal honor and a sense of importance that she is expected to adhere to the cultural ethics. Although the ceremony brings awareness of her future roles as wife and mother, it does not assume that the goals of success and achievement are not for women. The decision-making, planning, and execution of the puberty rites are by women. The mother plays the role of the primary decision-maker.

The girl is introduced to the adult female domain through a series of pleasant and meaningful rituals. The entire family is present to show its total approval and recognition of her importance as well as her future role. The rites show the open attitude of the Sinhalese towards the sexuality of the female. There is no attempt to disregard or hide the realities of menstruation. The rite is conducive to an easy access to the psychological preparation for the biological realities of femaleness. The female is left with a clear understanding of her basic sexual identity and that the culture does not devalue her role. She is thus given a foundation from which to work towards the expectations of the culture, to her next passage in life.
NOTES

1. Polished palm leaf on which astrological data is written.

2. Sinhalese Astrologers attempt to forecast events and make personality assessments for an individual by noting the time of birth. Appropriate predictive formation is taken from elaborate manuals and almanacs.

3. Rupee is the currency in the country. One rupee equals 100 cents.

4. Betel leaf is from a climbing pepper whose fresh leaves are chewed together with the astringent hot of the betel palm.

5. Laundry is done by a male or female dhoby who visits homes weekly to take away the soiled clothes and to bring back laundered ones.

The dhoby comes from the Rada caste, the principal washer caste in the island. In marriage and in other ceremonies such as puberty and post-nuptial rites as well as funerals of high caste people, the people of the washer caste have a special function specifically connected with washing clothes.

The caste system in Sri Lanka is not similar to that found in India. In the early days with the selection of the King and in order to exalt his position, there came a division of labor and power. It no longer operates in seriousness, especially in urban areas. Buddhism looks down on a caste system. Religion, education and economic forces have resulted in many people changing their jobs resulting in a disregard of the orthodox view of castes. All Sinhalese follow this menstrual ritual, irrespective of caste.


6. This rabana is a drum approximately three feet in diameter, with a treated cow hide stretched over an 8 inch-deep wooden rim. This is placed over a three-legged wooden stand, and hot coals are placed underneath to give it the correct tone. Six to eight villagers sit around the rabana and perhaps
sing a tune while playing the drum. The reverberations can be heard for miles around and the passerby knows that this is either a wedding or a ceremony connected with a girl's coming of age.

7The cloth is of two yards in length and 45 inches in width. Women wrap it around the upper part of the body by taking it under the armpits, and men wear it around the waist when bathing.

8Gold coins are mostly those from British sovereigns and come in a quarter, half or full sovereigns, and would be given by very close relatives.

9The Sinhalese women's images in Sinhalese literature emphasize their walk of ease and dignity to that of a female elephant which has an unhurried gait of gracefullness.

10Sinhalese women from ancient times have not been secluded in the manner of many Orientals. There is no veiling or confining women into separate rooms during times of menstruation.
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ORANG AND BUSHBABY SOCIAL LIFE:
WHY SO SIMILAR?

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INTRODUCTION

There are a number of nocturnal prosimians that have been described as solitary, and this social structure is sometimes referred to as "primitive" (Jolly 1972:14). The so-called solitary-living species are characterized by a minimum of direct social contacts with conspecifics of either sex in the same age class. Generally, the adult female and her dependent offspring form the only cohesive social unit involved in daily intimate interaction. Nevertheless, sexually reproducing solitary species, whether primates, carnivores, or rodents, have social lives, and adults maintain indirect communication with others that have neighboring or overlapping home ranges. The communication of nocturnal prosimians relies primarily on the olfactory and auditory modalities to maintain spacing, except at mating. Thus, the terms "solitary," "asocial," and "dispersed" have been objected to since they obscure the fact that a given pair of adults and their subadult descendants or an adult male, several adult females, and their offspring can share a home range. This sharing may be partial or complete, even though they do not engage in either communal nesting or regular contact (Eisenberg 1979:457).

Traditionally, it has been held that the degree of aggregation is related to patterns of search for food, and mode of predator defense (Rodman 1977:409). Reproductive strategies are adapted to these environmental variables.

Although the solitary pattern is common among nocturnal prosimians, it is not limited to them. One of the great apes, the orang-utan (Pongo pygmaeus), is also characterized by a solitary social structure, although it has generally been held that being nocturnal and insectivorous are prerequisites. The orang-utan is, of course, neither.

The following is an attempt to correlate the social patterns of the orang and one nocturnal prosimian as these patterns are related to their subsistence strategies. New and, until now, unexplored similarities are pointed out and further field research is urged. The prosimian selected...
is the lesser bushbaby, Galago senegalensis, also called the Senegal bushbaby. The Senegal bushbaby is, if not typical of nocturnal prosimians, at least not atypical of them.

FEEDING STRATEGIES

Galago senegalensis

Prosimians occupy a diversity of habitats within the tropical and semi-tropical regions of the Old World. G. senegalensis lives in the dry wooded bushland and savannah-type country of southwest Africa and northern South Africa where seasonal variation is great. The favored food-stuff of most prosimians, including G. senegalensis, is affected by such variation. This is true of both the plant and insect food of the bushbaby, which together comprise the bulk of its diet. A wide variety of insect food is taken in addition to the supplementary plant food, which is important in the winter dry season when insects are scarce. The plant food utilized is the gum of several species of Acacia trees (Doyle 1974:194).

Activity of G. senegalensis begins about 15 minutes before or after sunset. One of the most intense periods of activity, involving a great deal of traveling and feeding, occurs immediately after awakening (Doyle 1974:177). In the course of a night G. senegalensis visits 300 or more separate Acacia trees, covering a total distance of almost a mile along a "tortuous path" (Martin and Bearder 1979:80). The same general path is used repeatedly, and points at which leaps and cross-overs are made are even less variable. The galago comes to the ground only to cross open spaces and on rare occasions to feed (Doyle 1974:166). Overall, the feeding strategy seems to be centered around the gum sites and they are the focal points of travel. During brief periods when certain tree species are in flower, G. senegalensis will prey opportunistically on attracted-insect swarms, staying, however, in the vicinity of the gum sites (Martin and Bearder 1979:80). The galago may spend up to two hours in a single tree under favorable conditions (Doyle 1974:194). More often, insect prey is taken en route from one gum site to the next. In one study, the animals were more commonly found at night in clumps of Acacia karoo, a gum-producing species. The gum of such trees is composed of acidic, water-soluble polymers of pentose sugars that are important to the galagos throughout the year. Gum deposits are thought to be more frequent in the dry season.
Calcium, important in bone formation, is also obtained from the gum. This mineral is poorly represented in insects (Martin and Bearder 1979:79). The galagos also take gum from Acaci *tortilis* and *A. nilotica*, yet these spiny trees are more commonly used as sleeping trees, due probably to their protective thorns (Martin and Bearder 1979:80). The most common pattern is for the galago to leave its sleeping site (a patch of vegetation dominated by thorn acacia) at dusk, feed as it moves through an area containing a fair number of *A. karroo*, finally stop at dawn at another similar sleeping site in a different feeding area.

**Pongo pygmaeus**

The orang-utan inhabits both swamp/lowland forests and mountain/hill forests of Sumatra and Borneo (Maple 1980:7). Orangs are primarily fruit eaters in the wild, but they are known to eat a variety of other vegetation including leaves, shoots, flowers, wood pith and bark. They prefer rare foods which are considerably dispersed, and as a result, orangs travel considerably in search of these foods. They are especially active in the season that fruits become rarer. Orangs have been observed to move along natural boundaries such as streams and ridges that have been termed "traditional arboreal routes" (Maple 1980:19). Orangs leave their nests (built daily) soon after sunrise and begin to feed (Maple 1980:25). There is a rest period about midday, which is generally followed by another bout of eating or foraging. By evening, orangs settle into a larger food source such as a tree in fruit (Horr 1979:318).

Feeding time increases and travel time decreases in relation to the fruit season. Day ranges are shorter when seasonal food such as fruits and flowers are abundant. When feeding on a permanent food resource such as leaves and bark, orangs tend to travel more (Rodman 1977:404).

*It* has been reported that male orangs appear to differ from females in the utilization of the vertical strata of the forest canopy where most fruits and flowers occur. Males were seen more often than females feeding on the ground. Males thus obtained less fruit, the preferred food (Rodman 1977:395).

The *orang-utan* relies on a wide variety of permanent food resources which, together, are probably not adequate to supply the animal with all the essentials for survival.
Fruits, which usually occur in small patches, are the main source of nutrition. Although there are some species of plant in fruit in any month, there is probably no great quantity of fruit at any given time. Due to the orang's size, all the fruit in a particular area can be exhausted in a relatively short time (Horr 1979:318).

SOCIAL STRUCTURE

Galago senegalensis

Home ranges of Galago senegalensis differ for males and females. Adult males have home ranges that are larger than those of females and that extensively overlap the ranges of one or more females (Doyle 1977:170-171).

Subordinate males are limited to peripheral ranges in some species of nocturnal prosimians, but this is not the case for G. senegalensis. Social dominance is age-related; with increasing age (and weight) there comes a time when a male no longer meets aggressive opponents within his range. It is in this range that the male has access to females (typically, three) and at this time he confines his activity to this home range, excluding only males of similar age and behavior. There are two classes of males in G. senegalensis society. First, there is the relatively young and lightweight (7½ oz.) male with an extremely large range which overlaps numerous males and females of all ages. Second is the relatively old, heavier (8 oz.) male with a smaller home range that excludes all other socially dominant males from any but small zones of overlap. These males tolerate others which remain subordinate, but invariably chase adult males. Thus, there is a social division between males, based on dominance, even though none are completely excluded from regular social contact with one or several females (Martin and Bearder 1979:79).

Since the dominant animal in each group is the adult male and since territoriality is a male-dominated activity, rivalry between males is probably the most important spacing device. As young males mature, rising antagonism among them or with established adults causes them to adjust their home ranges.

Galago senegalensis communicate with one another by both scent-marking and vocalization. To leave scent marks, the galago engages in urine washing. This is accomplished as the galago rubs a few drops of urine onto the soles of its feet. A trail of scent is left as the animal walks...
Galago senegalensis also advertises its presence vocally (Doyle 1977:171-172). It is not clear whether this advertisement is to attract females or to repel males. According to Doyle (1977:263) "courtship is always initiated by the male." What form this courtship takes is not described by Doyle.

Male vocalizations are evoked frequently by the presence of an unfamiliar conspecific of either sex and any age (Doyle 1977:235). G. senegalensis shows aggressive behavior toward adult male strangers which may lead to vicious fighting. Since vocalization is also a spacing device, such encounters are uncommon (Doyle 1977:171-172).

It has been reported that galagos form sleeping groups. These groups are extremely variable in composition and usually consist of a mother and her offspring. Sometimes adult females sleep together and occasionally do so with varying numbers of subadult males. A sleeping group never contain more than one adult male (Martin and Bearder 1979:78).

Galago senegalensis invariably build nests in their core area for sleeping. The nests are generally made of green acacia leaves and are abandoned when they become dry. New nests are rebuilt nearby (Doyle 1977:171-172).

Pongo pygmaeus

Orang-utan social structure appears to have three main components or population units. First, there is the adult female and her dependent young. They tend to cover a home range averaging ½ square mile in size. The adult male is the next unit, occupying about two square miles. A juvenile of either sex forms the third unit beginning at about age three with increasing independence (Horr 1979:319). Females in this stage tend to roam shorter distances, perhaps eventually forming home ranges that overlap with their mother's range (Doyle 1977:319).

One observer who saw two strange males pass through his study area at different times inferred that a two-class system exists for males in the adult population: a resident class and a nomadic class (Rodman 1977:408).

The general location of females is fairly predictable to the male orang who has a home range overlapping theirs. As the male roams the area he announces his presence by a loud bellowing. Receptive females generally move toward these sounds while others move away (Horr 1979:320). This loud bellowing, which is a ritualized long call of about four minutes, occurs two to five times daily and is often
accompanied by the tearing and dropping of limbs. The call also functions to announce the orang's presence to other adult males. Overt fighting may be reduced considerably by the long call, yet fierce fighting must be frequent because adult males often can be distinguished by their disfigurements which result from such conflict. The presence or absence of females determines the intensity of this fighting (Maple 1980:18).

DISCUSSION

In the above data, a number of similarities appear between the two species, *Pongo pygmaeus* and *Galago senegalensis*.

Seasonal variation of important food resources occurs in the habitat of both the orang and the bushbaby. These resources are fruit and insects, respectively.

As an element of social structure, reproductive strategies of all species must be adapted to specific environments. All males face the problem of finding mates while competing with other males for access to them. Both the orang and the galago confront this problem with similar strategies. Through competing with other males for the space occupied by the females, rather than forming permanent bonds with them, a male avoids competing with the females for resources they need to nourish his young.

Orangs, while not seasonal breeders, breed only once in 2½ to three years. For a male to sire more young, it is most advantageous for him to travel widely in search of receptive females, rather than to wait for a single pair-bonded female to come into estrus (Horr 1979:320).

The galago, on the other hand, tends toward seasonality since feral births occur in association with warm weather, rain, and plenty of food (Doyle 1974:254). Thus, females are likely to breed at certain times of the year which, in fact, should encourage group cohesion.

The solitary social arrangement of orangs is easily seen as adaptive with regard to the orang's pattern of search for food and the distribution of this food. Fruits are a small patch resource which are best exploited by foraging units of minimal size (one individual).

The social system of *G. senegalensis* also fits this model, though it is perhaps less immediately obvious.
If *Acacia* gums are the mainstay of the galagos' diet, these gums might be considered resources that occur in small patches. This, of course, would depend on the size of these gum deposits. Since there is no information available on the quantity of these deposits and the gum is not the major source of nutrition, insects should logically be the focal point of further analysis.

As mentioned earlier, trees, flowering in the range of *G. senegalensis*, attract swarms of insects. Such swarms do not qualify as a small patch resource. They are, however, a short-lived phenomenon and have little bearing on the overall feeding strategy of the galago. Normally the insect prey of *G. senegalensis* is encountered one at a time and, finally, a single insect is a small patch resource comparable to the fruit eaten by the orang.

It was stated above that male orangs eat less fruit than do females. This could be explained in terms of the males’ larger size, a characteristic of the sexual dimorphism that has resulted from competition between males. Nevertheless, the fewer fruits that he eats in "his" females' home range, the more there will be left to nourish his offspring. A female orang was once seen to displace an adult male orang from a fruit tree. One study area was described as "devoid of males during 1973 when only minor fruit crops were available and the females were subsisting on unusually large amounts of bark" (Rodman 1977:410-411). It was suggested that the males emigrated in the time of scarcity in order to reduce competition with the females. More likely, the males moved away to find more abundant resources without regard for the condition of the females. Similar behavior is not recorded for *G. senegalensis* males.

The mode of predator defense also requires consideration. Since, with the exception of man, there are no predators native to the area that threaten even an adult female orang, the protection provided by males in other species is not necessary.

*Galago senegalensis* appears, however, to be under heavy predator pressures since Martin and Bearder (1979:79) reported that six of their study animals were killed by spotted genets. Such pressure might at first appear to encourage the formation of defensive social groups, but this is not the case. The genet is a creature of three feet in length and probably would not be terribly intimidated by a group of eight-ounce galagos. If, however, the galagos' defensive strategy includes "mobbing" behaviour, the resulting confusion would probably allow most of them to escape.
A number of questions arise from the data provided for *Pongo pygmaeus* and *Galago senegalensis*. As indicated earlier, female *G. senegalensis* form sleeping groups and, upon occasion, one adult male may also be included in these groups. Might this inclusion of males in the sleeping arrangement be a seasonal phenomenon? If so, is mating, then, an activity which occurs during the day when the animals are in such sleeping groups? Perhaps the social cohesion encouraged by seasonal breeding is fulfilled at this time.

What role does scent-marking by *G. senegalensis* play in attracting the female? Is sexual behavior, in fact, initiated by the male, or does the response actually begin, as in orangs, when the female moves in the direction of male vocalizations?

Since male and female orangs appear to utilize food resources differently, is it not also possible that there is differentiation in insect and gum utilization by *G. senegalensis*?

Returning to the gum deposits utilized by galagos, in what quantities do these deposits occur? If they are large enough for communal use, how then might the social structure of a galagine species whose main source of nutrition is this gum, such as *Galago (Euoticus) elegantus*, be affected?

Is the orang-utan a species whose evolutionary lineage never departed from this "primitive" social arrangement? Or did it at one time share a more "complex" social organization with other anthropoidea, and later, because of geographic isolation, revert to the "primitive" pattern as a result of environmental factors? Although this pattern must be in part genetically determined in orangs, to what extent is it learned?

Is the nomadic class of orangs, as observed in the field, comparable to the younger, lightweight individuals in the system of *G. senegalensis*? Are they, in fact, socially mature animals roaming strange ranges for unexplained reasons?

This paper has compared the lives of two physically very different primates in an effort to answer previously unaddressed but important questions. In the process significant new questions have been generated that are well worth further field research.
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