

The Colorado delta during the Jesuit era

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The region of the Colorado River's delta is of exceptional interest, not least for the insights it can provide concerning the nature of aboriginal adaptations to rapid environmental change. History, archaeology, geology, and geography offer ambiguous but interesting testimony concerning the condition of the delta during the dimly perceived period between the middle of the seventeenth century and the arrival of Francisco Garcés and Juan Bautista de Anza in the 1770s.

For more than two centuries after its initial discovery by Europeans, the Colorado River's delta in northeastern Baja California lay within the shadowy penumbra of world history. Written records had finally begun to pierce the darkness after more than 10,000 years of unrecorded prehistory. Yet only brief and sporadic flashes illuminated the region. The result was a picture compounded from roughly equal measures of factual observation and of misunderstanding or fantasy.

In the mid-1770s, with the well-documented overland expeditions led by the Franciscan missionary Francisco Garcés and the Spanish colonial soldier Juan Bautista de Anza, a detailed and more or less continuous record of the region finally began. This paper discusses the century preceding that full historical dawn. In particular, it focuses on three major issues: the persistent question of whether Baja California was an island or a peninsula; the final stand of prehistoric Lake Cahuilla in the Salton Basin; and the identity of the native groups living in the delta.

An island or a peninsula?

Precursors, 1535-1605

The question of California's status as either an island or a peninsula was a longstanding geographical conundrum (León-Portilla 2001; Polk 1991; Sykes 1915). The Colorado delta held the key to resolving the issue.

With the discovery of the cape region of Baja California Sur in 1533 and Hernán Cortés's abortive attempt to colonize it in 1535, an obvious initial assumption was that the region was probably an island, lying off the coast of New Spain, and some early maps showed it as such. However, three expeditions to the Colorado delta soon changed that view.

Francisco de Ulloa was dispatched in 1539 to trace sea routes north from New Spain. He followed the Sonoran coast to the head of the Gulf of California, where he observed shallow, muddy waters (Hakluyt 1599-1600; Wagner 1929). The following year, two expeditions reached and penetrated the lower Colorado River area. Hernando de Alarcón sailed up the Gulf of California in 1540 and entered the Colorado River, apparently traveling at least as far as the Colorado's junction with the Gila River. Alarcón left a relatively detailed account of his observations (Hammond and Rey 1940). Later in the same year, Melchior Díaz trekked overland from Sonora to the Colorado River and crossed to the area west of the river. Unfortunately, Díaz died on his return trip, and the geographical details of his expedition are unclear, being known only from much later, secondary accounts (Forbes 1958, 1965).

The seaborne voyages of Ulloa and Alarcón were sufficient to establish, at a minimum,

that the landmasses of Sonora and California very closely converged. The explorers had failed to discover any strait separating the two regions, but whether their explorations near the Colorado River's mouth were thorough enough to have definitively ruled out the existence of a strait is not clear. At any rate, during the next 80 years, European cartographers rather consistently showed the Gulf as terminating at the mouth of the Colorado River.

The situation changed dramatically in the early seventeenth century. An expedition under Juan de Oñate in 1604-1605 traveled overland from New Mexico. The explorers descended the Colorado River from its junction with the Bill Williams River to its mouth in the Gulf, and then they returned north and east along the same route. Several accounts of this expedition have preserved a relatively detailed record of its observations (see Laylander 2004a). The members of the Oñate expedition thought that both their own observations and native accounts indicated that the Gulf continued to the north, passing to the west of the Sierra Cucapá into what is now known as the Laguna Macuata basin. This revised geographical interpretation was picked up and promoted by Antonio de la Ascención. For many decades after 1625, most (but not all) European maps showed California as an island, separated from the North American mainland by a strait in the vicinity of the Colorado River's mouth.

Kino, 1699-1706

The next European to reach the Colorado River delta after Oñate's party was the Italian Jesuit missionary Eusebio Francisco Kino. Kino had arrived in central Mexico in 1681, had taken part in two abortive attempts to establish missions in southern Baja California in 1683-1685, and then had served for many years in the northern frontier region of Pimería Alta, modern northern Sonora and southern Arizona.

As a student in Europe, Kino had accepted the minority view of California as a peninsula. However, in New Spain he was persuaded that California was an island, and he characterized it as such in his early writings and maps as late as 1697 (Burrus 1965). After the Baja California missions were finally established on a firm basis, beginning in 1697, Kino took a vicarious interest in their success, and he promoted the possibility of supplying them by an overland route from Pimería Alta. To the latter end, he led seven expeditions between 1699 and 1706 in the direction of the Colorado delta. Several of Kino's trips only reached the Gila River or its junction with the Colorado, or merely viewed the head of the Gulf from a distance, but on two trips, in 1701 and 1702, he entered the delta itself. Kino and some of his traveling companions left a relatively ample record of the results of their explorations in the forms of letters, reports, and maps (Bolton 1936; Burrus 1965, 1971; Kino 1919).

On the basis of his travels and his hopes for a mission connection between Pimería Alta and California, Kino revived the island-versus-peninsula issue. Changing his mind again, he became convinced that a land connection existed, and he would ultimately persuade many (although not all) of his successors. Kino's final opinion was the correct one, but it is worth considering the extent to which it was really conclusive, based on the evidence that was at hand.

A key event in persuading Kino of the existence of a link between California and the North American mainland have occurred in 1699, when Kino was traveling near the junction of the Colorado and Gila Rivers. He received from the native Quechan people a gift of some blue shells, which may have been *Haliotis* (abalone) shells. His previous experiences in 1683-1685 based at the abortive mission of San Bruno, near Loreto in southern Baja California, told him that such shells were to be found on the west coast of California but not on the Gulf side (Kino 1969:45). In

1700 he interviewed natives on the Gila River: “I made further and further inquiries as to whence came the blue shells, and all asserted that there were none in this nearest Sea of California, but that they came from other lands more remote” (Kino 1919:1:237). He argued that the shells must have been brought overland, because “the natives are unable to cross a great arm of the sea which the opponents [of a mainland connection] placed there instead of the land” (Kino 1919:2:88).

Kino’s argument for a land connection based on the blue shells involved two fallacies. He may have correctly observed that such shells were not present in the central Gulf, but he had no reliable information concerning the shellfish species that might be present in the northern portions of the Gulf or, in particular, on the mainland coast to the north of the hypothetical strait. Nor was he on solid ground in assuming that the native peoples could not have brought the shells across a strait by boat. Thomas Bowen (2009a, 2009b) has assembled detailed ethnohistoric and archaeological evidence showing that most of the Gulf’s many islands were visited or permanently inhabited by the region’s native peoples. To do so often necessitated voyages of several kilometers across open water. There was no basis for Kino’s assumption that the shells could not have been carried across a narrow strait, such as the one the Oñate expedition had described.

Other evidence for the land connection, in Kino’s mind, came from observations made at a distance. In his travels, he failed to see any continuation of the Gulf to the north, between the lower Colorado River and the mountains of California. For instance, in October 1700, Kino ascended a hill near the junction of the Gila and Colorado Rivers. Using a long-range telescope, he reported seeing level country extending more than 30 leagues (perhaps 120 km) to the west, southwest, and south, without any signs of the sea. However, from this vantage point, if a narrow strait had continued to the west of the Sierra Cucapá, as Oñate’s 1605 party had claimed, Kino would not have been able to see it. In March 1701, Kino reached Bahía del Adair on the Sonora coast, in the company of Juan María Salvatierra, the founder of the Baja California missions, and Juan Mateo Manje, a military officer who was Kino’s frequent companion on his explorations. They could see the Gulf narrowing to the north, to a width that appeared to be no more than 11-13 km, convincing Kino and Salvatierra, although not Manje, that the Gulf must end there. In November 1706, Kino’s final expedition toward the Colorado River delta got as far as Cerro Pinacate in northwestern Sonora. Kino ascended the summit, from which he could see the sea to the south and, he claimed, “a view of the land for more than forty and fifty and sixty leagues distant” (Kino 1919:2:205). From Cerro Pinacate, the entrance to the Laguna Macuata Basin was about 160 km (or 40 leagues) to the northwest. Whether Kino could have distinguished a narrow strait at that distance is questionable.

Kino’s travels within the delta were also important, but again inconclusive. He first entered the delta south of the Gila River junction in November 1701. At the southern limit of his travels that year, he was told that the head of the Gulf still lay one day’s journey farther south, where the Colorado River and two other rivers emptied into it. In March 1702 he again traveled south into the delta, descending “to the bayous of the sea”:

We inquired about ... all the rivers of the west, and, besides, about the very large Rio Colorado which, joined with the Rio Grande or Rio de Hila, empties into the head of the Sea of California on the west side. Near there also empty the Rio Azul, which comes from the north, and the Rio Amarillo, which comes from the northwest, as the Rio Colorado from the northeast and the Rio Grande, or Rio de Hila, from the east ... [Kino 1919:1:341-342].

Herbert E. Bolton (1936:480) suggested that Kino’s Río Azul was the Río Pescadero and his Río Amarillo was the Río Paredones. Alternatively, the Río Azul may perhaps have been the

Río Hardy, draining the western portions of the Colorado River's delta, and the Río Amarillo might correspond to the outlet of the Laguna Macuata basin. At any rate, if any of these interpretations are correct, the "bayous" that Kino reached must have lain to the north of the southern end of the Sierra Cucapá, and Kino was therefore not in a position to refute at first hand the Oñate party's claim that the Gulf continued west of the Sierra Cucapá.

Kino had initially encountered a widespread belief, if not quite amounting to a consensus, that California was an island. His explorations legitimately cast serious doubt on that view, convincing Kino himself of the contrary and beginning to change others' opinions as well. Yet Kino's evidence still fell short of proof. He had demonstrated that many seventeenth-century maps, including his own, which had shown a gap of 100-200 km between the coasts of California and Sonora, were in error. He had not definitively ruled out the existence of a much narrower strait.

Later Explorations, 1721-1776

Kino's explorations changed the discussion of California geography, but they were not universally accepted as settling the island-versus-peninsula issue. Manje, who had accompanied Kino on some of his expeditions, was ambivalent about the matter and, in the end, decided in favor of the island hypothesis. In Sonora in 1716, the Jesuits Luis Velarde and Agustín Campos were strong in their belief that Kino had been wrong, and that California was an island (Velarde 1931). From Baja California in 1717, Jaime Bravo shared that view (Venegas 1979(4):208-212). Miguel Venegas, the Jesuit author of an official 1739 account of Baja California, concluded that the region was an island (Venegas 1979(4)489-499).

In 1721, the Honduran Jesuit Juan de Ugarte and the English sea captain or pilot William Strafford were sent to find the head of the Gulf, to try to settle the matter. Ugarte wrote an account of the 1721 voyage from Loreto to the delta, and Stratford included a few relevant comments in his subsequent description of Baja California, written in 1746 (Ramos 1958). The explorers reached their objective but did not sail up into the estuary of the Colorado River. Ugarte heard a report from local Indians that seemed to indicate that the estuary connected with the Pacific coast to the north, at least at times of high tides.

Still seeking a definitive answer to the geographical question, the Croatian Jesuit Ferdinand Consag was sent on another expedition to the head of the Gulf in 1746. Consag and 80 followers took four small boats up the eastern coast of the peninsula, making important geographical observations but being unable to enter the river itself because of its strong current. Information on Consag's explorations comes primarily from his own day-by-day report (Lazcano and Pericic 2001; Venegas 1943(3):91-120). Additional information was also later collected by his fellow-Jesuit, Miguel del Barco (1973:368-375). Consag's findings and his conclusions were widely disseminated. He prepared two maps showing the Gulf ending at the mouth of the Colorado River. When in the 1750s another Jesuit historian, Andrés Marcos Burriel, edited Venegas' manuscript for its ultimate publication in 1757, he included Consag's diary as an appendix, and Burriel came down in favor of the peninsula hypothesis (Venegas 1943(1):24). The Venegas-Burriel volumes were translated into several European languages, but despite the wide distribution of Consag's account, many continued to doubt the conclusion that California was a peninsula (Crosby 1994:127; Dunne 1952:323-324).

Consag's diary left no doubt that Baja California and Sonora came close together at the mouth of the Colorado River. But that mouth, as seen by these explorers, was clearly tidal, mixing seawater with freshwater from the river. Was this merely the drowned estuary of the river, or did

the river discharge its waters into a very narrow straight that had an entrance from the north as well as from the south? Consag's maps show that, along with Kino, he adopted the first of these interpretations, but it is not clear that he had found any more conclusive proof in its favor.

Jakob Sedelmayr, a Bavarian Jesuit, arrived in Mexico in 1736. He was assigned to Pimería Alta, and from there he undertook several expeditions of exploration. He reached the vicinity of the junction between the Gila and Colorado Rivers on at least four occasions, in 1744, 1749, 1750, and sometime after 1751. Twice he followed the Colorado River downstream from that junction into the delta, in 1749 and 1750. However, he never reached the river's mouth, which was reported to lie about 30 leagues (120 km) south of the Gila-Colorado junction.

In central Mexico in 1736, Sedelmayr had found a general uncertainty concerning the northern limits of the Gulf of California: "one does not know whether it [California] is an island or a continent, so that there are many geographers here who make it an island" (Sedelmayr 1955:3). As late as 1744 he still considered the issue as unresolved. But by 1747 he felt that it had been settled in favor of the peninsular view by Consag's exploration (Sedelmayr 1955:51). Sedelmayr's own travels in the delta after 1749, like Kino's travels half a century earlier, were too limited to be conclusive.

At the very end of the Jesuit period, in 1766, Wenceslaus Linck, a Bohemian Jesuit missionary-explorer, unsuccessfully attempted to reach the Colorado River overland from Baja California in order to settle the geographical issue. In Linck's own mind, the island/peninsula question still remained unanswered (Bendímez and Laylander 1985; Burrus 1966).

The geographical mysteries of the Colorado delta region were definitively dispelled in the 1770s, after the expulsion of the Jesuits from Baja California and Sonora and after the initial mission colonization of Alta California. Garcés, an Aragonese Franciscan missionary in Sonora, traveled to the delta in 1771, going as far west as the northern end of the Sierra Cucapá. Finally, in 1774 and 1775-1776, two expeditions led by Anza crossed the Colorado Desert to the Peninsular Range and completed the link between Sonora and California's western coast. The documentation for these expeditions in the form of diaries and reports by several participants is abundant (Bolton 1930; Garcés 1900).

Prehistoric Lake Cahuilla

A second issue relevant to the Colorado River delta during the late seventeenth and early eighteenth centuries is the status of Lake Cahuilla. The lake was a great body of fresh water that periodically filled the Mexicali, Imperial, and Coachella Valleys when the waters of the lower Colorado River naturally diverted themselves northwest rather than directly south into the lower delta.

The former existence of Lake Cahuilla was recognized as early as the middle of the nineteenth century by the geologist William Blake (1856). The archaeologist Malcolm J. Rogers (1945) made an initial assessment that there had been a single late prehistoric stand of the lake, and that it could be dated between about A.D. 1000 and 1500 on the basis of the pottery associated with its shoreline. Some Cahuilla and Kumeyaay oral traditions also confirmed the scenario of a late prehistoric lake stand (Laylander 2004b; Wilke 1978). However, subsequent archaeological and geological studies have demonstrated that there had been several separate stands during the last 1,000 years of prehistory (Waters 1983; Wilke 1978).

Researchers had assumed that any lake stands must have predated the appearance of European explorers in the region, beginning with Ulloa, Alarcón, and Díaz in 1539-1540. All

explorers during the next two centuries had reported the Colorado River as emptying directly into the Gulf of California, and none of them had observed a lake. However, there were substantial chronological gaps separating the reported visits to the region, notably one between Alarcón in 1540 and Oñate in 1605, and another between Oñate in 1605 and Kino in 1701. Models based on modern natural flow rates for the Colorado River and evaporation rates in the Colorado Desert suggest that about 18 years of uninterrupted inflow from the river into the Salton Basin would have been required to fill Lake Cahuilla to its maximum level of 12 m above sea level, and that about 55 years of uninterrupted evaporation would have been needed for the disappearance of the lake (Laylander 1997a; Waters 1983; Weide 1976; Wilke 1978). Thus there would have been sufficient time for a complete cycle of the lake's rise and fall between the visits of Oñate and Kino.

A growing body of archaeological evidence in the form of radiocarbon dates has confirmed that such a seventeenth-century lake stand did in fact occur (e.g., Cleland 1999; Gurrola and Rockwell 1996; Laylander 1997a; Sieh and Williams 1990). More specifically, it has been argued that multiple charcoal radiocarbon dates from the Elmore Site (CA-IMP-6427), a short-term but rich archaeological deposit containing lacustrine resources and located on Lake Cahuilla's bed at 55 m below sea level, indicate that the site was probably occupied during the 1660s or 1670s. Based on the site's elevation, this would presumably have been a minimum of about 40 years after the lake's final high stand. If the lake's final rise began after Oñate's visit to the delta, that final high stand must have been a very brief one.

However, there are many potential pitfalls in the use of radiocarbon dates. The radiocarbon in charcoal dates from the time of the plant's death, and that death might have occurred substantially prior to when the wood was used to make a fire. Bulk carbon samples may represent mixtures of wood of different ages. Samples can become contaminated by older or newer carbon after their deposition. An additional problem is that the large-scale pumping of old carbon into the atmosphere from the industrial burning of fossil fuels has rendered dates subsequent to about A.D. 1700 largely indistinguishable from each other.

San Diego State University geologist Tom Rockwell and his associates have recently been collecting high-precision radiocarbon dates from non-archaeological sites at or near the maximum lake level (Rockwell, personal communication 2008). These dates suggest to them that the lake may have been full as late as A.D. 1700. It will be of interest to see how this research develops over the next few years.

The early historic accounts may shed some light on the likelihood of such an extremely late lake stand. Kino traveled in the delta between the Colorado-Gila junction and the lowest parts of the river in 1701 and 1702. His objectives were largely geographical, and he was a trained and experienced cartographer, bringing with him assistants who had some knowledge of Yuman languages and who were able to converse with the local inhabitants. Yet if a nearly full Lake Cahuilla was still present a short distance to the northwest of his routes, Kino neither saw nor heard anything about it, or else he failed to mention it in his reports and maps.

It is possible that Kino would not have been able to see the full lake from the vantage points in his travels in and near the delta. Caitlin Lippincott (2007:14) calculated that from a height of 1,000 m on Cerro Pinacate in 1706, the high-stand shoreline would not have been visible to Kino because of the earth's curvature. The situation for Kino's closer approaches at lower elevations is less certain. If Kino's report that he was able to see solid land extending some 30 leagues to the west and southwest of the Gila-Colorado junction in 1700 is correct, this would seem to indicate at least that the lake was not close to its maximum level during that period, since the maximum shoreline would have lain about 50 km (12 leagues) to the southwest of the junction across level

terrain.

Lippincott (2007:14) suggested that Kino may have heard something about the lake from the native Quiquima in the delta but that he had dogmatically dismissed the possibility. In his own account, Kino wrote:

And if some hostile and obstinate persons should maintain that some Quiquima Indians say that farther west the sea still extends to the northwest, these Quiquimas speak of the other sea, on the opposite coast, and not of this our Sea of California [Kino 1919(1):354].

It is noteworthy that this passage makes reference to a supposed continuation of the Gulf of California, not to a freshwater lake. If the testimony is authentic, a far more likely interpretation would be that it referred to a continuation of the Gulf into the Laguna Macuata Basin, rather than referring to either Lake Cahuilla or the Pacific coast.

If the lake was still present around 1700, one is left with the conclusion that Kino either did not hear about it or else failed to mention it in his writings or to show it on his maps. This would need to have been the case, despite the facts (a) that Kino was able to communicate with the Yumans on the lower Colorado River and in the delta, (b) that those groups would certainly have been aware of the current status of the lake, (c) that such geographical issues were among Kino's primary preoccupations, and (d) that the presence of a vast lake nearby had a direct bearing on another preoccupation, the potential for overland communications with California. This seems highly unlikely. However, it remains to be seen how the archaeological and geological evidence concerning the lake's chronology will develop as more of it is collected, analyzed, and published during the next few years.

The inhabitants of the delta

A third issue concerns the distribution of native ethnolinguistic groups in the Colorado River delta region during the late seventeenth and early eighteenth centuries. The question of ethnic continuity versus change is critical in understanding the region's aboriginal past.

Using early historical records to construct such distributions involves several pitfalls. The early observers frequently did not make clear whether the groups they distinguished spoke different languages or merely belonged to different sociopolitical communities. Group names were given considerable variation in their spellings. A particular group may have been known by more than one name, or the same name (such as, for example, a term in a native language meaning "southerners," "enemies," or "people") might have been applied to more than one unrelated group. Even when working with a fixed set of ethnic terms, early observers such as Garcés were sometimes initially mistaken concerning the affiliations of particular individuals or communities (e.g., Forbes 1965:145-146).

In the case of the Colorado River delta, the problem of ethnic identifications is made particularly difficult -- but also particularly interesting -- by the region's unusually high degree of ethnic instability during the late prehistoric and early historic periods. At least two factors appear to have contributed to major discontinuity in the tenure of territories within the delta: agriculture, and Lake Cahuilla. The practice of agriculture in the floodplain of the lower Colorado River required that settlements be shifted annually in response to changes in the patterns of the river's overflow (Hicks 1974). Within a more extended time frame, but also more drastically, the cycles of Lake Cahuilla caused extreme changes in the distribution of resources within the broader region. When the lake was present, important resource areas emerged within the Salton Basin, which was

otherwise largely sterile. The delta itself presumably collapsed as an important resource area while, for periods of nearly two decades, the Colorado River was entirely diverted away from it, to fill the lake (Laylander 2006).

Arguably, ethnohistorians have frequently been biased in favor of interpretations that emphasize long-term ethnic territorial stability. To the extent that the evidence permits, these investigators have understood an unfamiliar ethnic name in the early records as most likely to refer to the group that is known to have lived at the same location during later times. There may also be political pressures from modern native groups in favor of such interpretations. In many cases, the presumption of ethnic stability may be the most reasonable one to make, but it ought not to be accepted as axiomatic. In the particular case of the Colorado delta, there are strong reasons to be skeptical about ethnic continuity. The radical shifts in the distribution of natural resources within the delta and in the Salton Basin arising from the cycles of Lake Cahuilla have already been mentioned. Early historical records for the lower Colorado River also attest to a pattern of exceptionally intensive interethnic warfare and the large-scale displacement of groups such as the Halchidhoma, Kahwan, and Halyikwamai during the late eighteenth and early nineteenth centuries (Jorgensen 1980; Spier 1933).

Two of the expeditions prior to the mid seventeenth century, led by Alarcón in 1540 and Oñate in 1605, offered evidence concerning the delta's ethnolinguistic geography (Table 1). Alarcón reported the presence of a substantial number of different "peoples" in the delta, perhaps seven or eight groups below Pilot Knob (Forbes 1965; Hammond and Rey 1940). Although these peoples did not necessarily all represent linguistically distinct groups, at least two different languages were reportedly spoken. It has been suggested that one of the languages was Piman, although the argument in favor of this view has also been questioned (Forbes 1965:97; cf. Laylander 1997b:44-45). Specific names for two of the groups were mentioned in the Alarcón account: the Quicama (Quicoma, Chicama) and the Coana (Coama).

Reports from Oñate's expedition provide more detail. At the Gila-Colorado junction, which would later be occupied by the Quechan or Yuma, lived an otherwise-unreported group, the Osera (Ozara, Oçara, Oseca), who probably spoke a Piman language. Farther downriver were found, in succession, the Halchedoma (Alebdoma), Cohuana (Coguana), Haglli (Agalle), Agalecquamaya (Tlalliquamalla), and Cocapa.

The problem addressed here concerns the extent to which ethnolinguistic distributions may have changed during the period that followed Oñate's expedition. Once again, the testimony of Kino is central to this issue. It comes from both the written reports of his explorations and from the maps that displayed his conclusions graphically.

In October 1700, near the Gila-Colorado junction, Kino received information on the ethnic geography of the region. In addition to the Yumas (Quechan) at that junction and the Alchedomas (evidently Oñate's Halchedoma), who were now living upriver from the junction, he heard about four "new" nations on the Colorado River to the south of the junction: the Quiquimas, Bagiopas, Haobonomas, and Cutganas (Kino 1919:1:249).

In November 1701, Kino first explored southwestward from the Gila-Colorado junction, visiting settlements of the Quiquimas. At a Quiquima village, he also received visitors from the Coanopas, sometimes interpreted as the Cocopa, although the Coanopas were said to have come from the north and northwest (Burrus 1971:123; Kino 1919(1):315). At another Quiquima settlement, farther south and on the west bank of the Colorado River, he was visited by the captain of the Cutganas and a large following, also coming from the north and west, and by an Indian from the Hogiopas, the next nation to the south. The Hogiopas were referred to as a "new" people,

Table 1. Ethnic groups identified in early historic records of the Colorado River delta.

Group	Alarcón 1540	Oñate 1605	Kino 1701-1702	Sedelmayr 1749-1750	Nentvig 1764	Garcés 1774	Identification *
Quicamas, Quicomas, Chicamas, Quiquimas, Guicamas, Huicamas	X		X	X	X	X	Identified with the Halyikwamai by Kroeber (1920), Forbes (1965), and Kelly (1977)
Coamas, Coanas, Cohuanas, Coguanas, Quahanas, Cuhanas, Cuhamas	X	X		X	X		Kahwan language identified as being identical with that of the Halyikwamai by Spier (1933) and Kroeber (1943), and with Cocopa by Crawford (1983)
Oseras, Ozaras, Oçaras, Osecas		X					Identified with the Maricopa by Bandelier (1890-1892); identified with the Piman linguistic group by Kroeber (1920) and Forbes (1965)
Halchedomas, Alebdomas		X					Evidently the modern Halchidhoma
Hagllis, Agalles		X					Identified with the Halyikwamai by Kroeber (1920), and possible identifications with the western Yumans, Maricopa, or Hogiopa were suggested by Forbes (1965)
Tlalliquamallas, Agalecquamayas, Jallicuamais		X				X	Clearly the modern Halyikwamai, whose language is identified with Kahwan by Spier (1933) and Kroeber (1943)
Cocapas, Cucapas		X				X	Clearly the modern Cocopa
Cutganas			X				Identified with the Quechan by Bolton (in Kino 1919) and Forbes (1965), and with the Kahwan by Kroeber (1920)
Yumas			X	X	X	X	Clearly the modern Yuma (i.e., Quechan)
Hoabonomas			X				Identified with the Cocopa by Kelly (1977)
Bagiopas			X		X		Identified with Shoshoneans by Hodge (1905), and with the Cocopa by Kroeber (1920) and Forbes (1965)
Hogiopas, Ojiopas			X		X		Identified with the Cocopa by Bolton (in Kino 1919), Kroeber (1920), Forbes (1965), and Kelly (1977)
Coanopas			X		X		Identified with the Kahwan by Bolton (in Kino 1919) and Forbes (1965), and with the Cocopa by Kelly (1977)
Guicamopas				X			--
Cajuenches, Cojats, Axagueches						X	Identified with the Kahwan by Kroeber (1920), Forbes (1965), and Kelly (1977)

* See also Laylander 1997b:44-49.

possibly indicating that Kino did not equate them with the previously reported Bagiopas.

In March 1702, Kino again entered the delta, traveling south to a location that he took to be close to the head of the Gulf. There he met “Quiquimas, Cutganes, and Hopiopas, who had come from the west and from the southwest” (Kino 1919:1:341).

According to Sedelmayr, two hostile groups lived on the lower Colorado River: the Yumas near the Gila-Colorado junction, and the Guicamopas to the south of them. Sedelmayr brought with him in 1744 a Guicamopa interpreter, and he reported that the Yumas, Cocomaricopas (or Maricopa, on the middle Gila River and on the Colorado River above the Gila), and Guicamopas all spoke the same language (i.e., Yuman languages), in contrast to the Uto-Aztecan-speaking Pima (Sedelmayr 1955:32).

In Sonora in 1764, a German Jesuit missionary, Juan Nentvig, wrote an account and produced a map that summed up current understanding of ethnic distributions near the end of the Jesuit period (Nentvig 1980). In the delta, he assigned locations to the Yumas, the Cuham or Cuhanas, the Guicama or Quiquimas, and the Bagiopas. He also referred more vaguely to Coanopas, Ojiopas, and others.

Garcés, Anza, and their companions in 1774-1776 reported several groups living downstream from the Yumas. These included Quiquimas or Jallicuamais, Cajuenches, and Cucapas. The Bagiopas were now placed upstream from the Yumas.

Still later, in the 1820s, travelers mentioned two or three other delta groups that do not seem to have been referenced in the earlier accounts. The Axua and the Pipi are plausibly identified as the Akwa’ala or Paipai, who are known ethnographically as inhabitants of the mountain and coastal areas of Baja California to the southwest (Hardy 1829; Pattie 1833). The Comayo were presumably the Kamia or Kumeyaay, who sometimes shared lands on the Colorado River with the Quechan (Hardy 1828).

By the beginning of systematic ethnographic studies in the early twentieth century, most of the delta was assigned to a single ethnolinguistic group, the Cocopa. The Kahwan and Halyikwamai were still remembered as distinct groups that had been displaced from the delta in the early nineteenth century. Other group identities were preserved only in the historical records. Did these names merely refer to different Cocopa-speaking communities, or was the delta’s earlier ethnolinguistic condition substantially more complex, diverse, and unstable than such an interpretation would imply? Closer analyses of the ethnohistoric record may never be able to settle the issue definitively. But possibly ethnic uniformity or diversity in the delta may be detectable through archaeological studies -- for instance, by focusing on stylistic attributes of the region’s aboriginal ceramics.

Summary

One unifying theme relating to the Colorado River’s delta during the Jesuit era is uncertainty: the uncertainty during the Jesuit period itself as to whether California was an island or a peninsula, and the uncertainties in our own time as to the chronology of Lake Cahuilla’s final stand and the ethnolinguistic identities of the delta’s inhabitants at various periods.

An island or a peninsula?

In attempting to understand historical events and ideas, it seems appropriate to try to avoid being prejudiced by knowledge of ultimate outcomes. The seventeenth- and eighteenth-century proponents of the idea of California as a peninsula are now known to have been correct. However,

that does not necessarily mean that they were wiser, more perspicacious, or better informed than those who took the opposite view at the time.

Modern writers have not always been cautious on this point. Godfrey Sykes wrote that “Father Kino’s explorations had in reality settled the question of the non-insularity of California” (Sykes 1915:755). Ernest J. Burrus wrote that “the *proof* of the peninsularity of Lower California ... is Kino’s best known discovery, or more correctly, his most publicized rediscovery” (Burrus 1965:29; italics added). Peter Masten Dunne (1952:207, 216) claimed that Kino “had settled the question” of California as a peninsula, that his contemporaries’ skepticism is “amazing” and their conservatism is “shocking” -- “it was Galileo all over again.” Dora Polk (1991:297, 301, 306-307) characterized the debate as one between “reason and induction” on one hand and “the mythic imagination” on the other, between the Enlightenment and the Middle Ages. She commended Kino and the other peninsular advocates for their “straight thinking,” “balanced perception,” “sound rational facilities,” “empiricism,” and “rationalism,” whereas their opponents had “taken the last exuberant gallop of the unbridled imagination,” betraying “the continuing confusion between fact and fallacy.”

Given the state of the information that was available during the period in question, there seems to be little justification for these characterizations. The critics’ arguments against a peninsular connection were sometimes spurious, as when they invoked vague references to earlier explorers’ alleged travels up the Gulf into an imaginary Strait of Anian extending across North America. On the other hand, proponents’ claims could be equally unfounded, as when Kino blamed the insular idea on “the English pirate Francis Drake” or when he invoked the supposed evidence of the blue shells. The superior vantage point of the present, from which these issues are no longer uncertainties, ought not to cause historians to interpret early geographers’ hesitations and skepticism as mere bullheadedness, or to misread fortunate guesses as inspired insight.

A lake or no lake?

In attempting to pin down the radiocarbon chronology of Lake Cahuilla, it is important not to fall into the common error of exaggerating the accuracy and the precision that is available from radiocarbon dates. Nor would it be appropriate to overlook the natural physical constraints on any chronology that were imposed by the lake’s hydrology. Nor, again, would it be wise to neglect the important clues contained in early historical accounts of the delta, particularly those from Kino.

Who were the delta’s inhabitants?

In reconstructing late prehistoric and early historic ethnolinguistic distributions, ethnic stability and continuity ought not to be treated as if they were always the legitimate default assumptions. This is particularly true for regions that were as strongly marked by major environmental instability and patterns of intensive interethnic conflict as were the Salton Basin, the lower Colorado River, and the delta.

Arguably, uncertainty in both past and present knowledge is a factor that archaeologists, anthropologists, and historians have not always given its full due. Admitting uncertainty may stimulate critical reconsiderations of the historical record. It may also create a foundation for issue-focused archaeological studies to try to answer the questions, once their pertinence is recognized. Ultimately, perhaps, acknowledging uncertainty may produce a real reduction in our uncertainties about the regional past.

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