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Navigating cooperative marketplaces: the Chumash Indians and the dynamics of hunting/gathering/fishing economies

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The Chumash Indians from Southern California produced, used, and traded shell beads for approximately 8,000–10,000 years. Their exchange network included an extensive portion of Western North America. Many scholars recognize that some shell beads from the region were used as currency starting at least 1,500 years ago. Substantial evidence for the production and use of these beads exists in the Santa Barbara Channel region, allowing researchers to investigate a hunting/gathering/fishing group's use of money in marketplaces. The Chumash Indians used money for purchasing food, ceremonial paraphernalia, and other items at open marketplaces during ritual gatherings with groups of southern California Indians from diverse cultural and linguistic backgrounds. The focus of the paper is to assess a non-state society to determine if its marketplace strategies are based on self-serving actors who do not promote cooperation, or if the participants create and maintain institutions to inhibit overexploitation and depletion of resources, therefore fostering cooperation. On the basis of ethnohistoric, ethnographic, and archeological data, I propose that among the Chumash, participants in their marketplaces organized and maintained institutions that furthered cooperation. The Chumash created hybrid spaces at their ritual gatherings where strategies such as altruistic punishment, market management, regular marketplace periodicity, and established marketplace locales served to promote cooperation. Understanding non-state societies that had an emphasis on trade networks and economic structures such as the Chumash is one means in revisiting past interpretations of premodern societies that traditionally were viewed as lacking marketplace exchange.

KEYWORDS

marketplaces, transegalitarian, shell beads, money, cooperation, hunter/gatherers/fishers

Introduction: cooperative marketplaces

Blanton and Feinman (2024) provide robust evidence of societies throughout the world that include premodern and contemporary marketplace economies to make a strong case that anthropologists have consistently diminished the significance of marketplace exchange in premodern times. One issue that has persisted with advancing theories of markets and marketplaces is that there has been a reliance on claims that Polanyi (1944, 1957), as well as other economic anthropologists and social scientists have made, that marketplaces only exist where there is political control over market transactions. These ideas persist despite many examples of pre-state societies with marketplaces (Feinman and Garraty, 2010; Blanton and Feinman, 2024).

Instead of regulatory controls provided by the state or political institutions, Richard Blanton and Gary Feinman suggest that certain types of “para governance” or autochthonous organizations can ensure the marketplace is safe (Blanton and Feinman, 2024, p. 7). They identify four strategies that are frequently used by societies to foster cooperation and egalitarianism in open marketplaces (Blanton and Feinman, 2024). The first is “altruistic punishment,” often associated with societies that have limited institutionalized marketplace governance. This type of discipline may be administered by the “market crowd itself,” where those invested in the market protect their joint interests with a threat of altruistic punishment, defined as “an action that provides group benefits, but is personally costly” (Blanton and Feinman, 2024, p. 6). This assumes that the open marketplace is a sphere in which those who participate are willing to protect their joint interest at a cost. A second strategy and a more common one is paragovernance. This type of regulatory action is often provided by market managers who operate only within the space of a bounded marketplace. Instead of heads of a polity controlling the marketplace, regulatory controls are enacted by parapolitical authorities such as trading organizations. A third strategy proposed by Blanton and Feinman (2024, p. 7) that fosters cooperation is “synchronization and territorialization.” A predictable timetable and place for buyers and vendors to undertake their bargaining interactions provide marketplace participants a previously determined location to engage in price negotiations based on the quality of objects and other variables. This type of marketplace management serves to ensure that marketplace gatherings enhance competition and places downward pressure on profiteering. The fourth strategy is focused on the physical or symbolic boundedness of the marketplace (Blanton and Feinman, 2024, p. 7). This is a demarcated area where trading takes place; it may also be the location for religious activities, with the implication that there could be a greater possibility of peaceful interactions. Among some hunter-gatherers-fishers it can be difficult to identify the boundaries of a marketplace, especially those who primarily use perishables for building material.

In this paper I focus on the Chumash Indians of the Santa Barbara Channel region, and to a lesser extent, other California Indigenous peoples, with the goal of reexamining perspectives on the marketplace and exchange among premodern and preindustrial societies. The framework of this discussion is based on Blanton and Feinman’s (2024) critical reappraisal of Karl Polanyi’s assessment of economic anthropology and markets in the ethnographic and archeological literature. One significant question is based on the benefits that are gained through cooperative marketplaces. I turn to Stanish’s (2017) in depth study of the evolution of cooperation in stateless societies. In his book, Stanish suggests that concepts based on anthropological game theory provide key insights into the behavior of smaller-scale groups that tend to lack state level societies and autocratic government. In these types of situations, conditional cooperators, those who, under certain circumstances co-operate, are rewarded, while under these same conditions, defectors are punished (Stanish, 2017, p. 16 and 124). One of the greatest benefits for working cooperatively is that people tend to obtain more resources for equal or even less labor costs (Stanish, 2017, p. 95). This does not mean that these societies lack aggrandizers; however, for them to be successful they need to consider the whole group. Related to the discussion is collective action theory, which underscores the advantages that cooperation can have over competitiveness, often resulting in the

greater good of the society or group. Although this approach is generally more associated and discussed among larger-scale societies such as states (Blanton and Fargher, 2008; Carballo et al., 2014; Demarrais and Earle, 2017; Feinman and Fargher, 2008; Stanish et al., 2024), it has merit in understanding non-state societies as well. Collective action theory and cooperative economic behavior provide strong reasons that non-competitive marketplace not only existed but thrived.

The Chumash are an ideal group to consider the significance of economic cooperation because they are a non-state or transegalitarian society that had an open market economy. Transegalitarian as defined by Hayden (1995, 2001) are societies “that are neither egalitarian nor politically stratified” (Hayden, 1995, p. 18; see also Hayden et al., 2010; Hayden, 2014, p. 35). This broad definition, in which chiefdoms are a type of transegalitarian society (Hayden, 1995, 2014; see also Clark and Blake, 1994; Owens and Hayden, 1997), is used in this paper. Although Hayden, Clark, Blake, Owens and others tend to emphasize aggrandizers in their discussion of transegalitarians, I include the concept that there could also (or primarily) have been “conditional cooperators” (Stanish, 2017). In contrast to generalized hunter gatherers who rely more on kinship for alliances and sharing, transegalitarian societies place a greater emphasis on raiding, food storage, wealth creation, and alliance feasts that extend beyond kinship communities (Hayden, 2001, p. 44–45). Therefore, transegalitarian societies can provide context on the emergence of money and its use prior to the state.

The Chumash Indian example from North America

I review published sources to investigate the economic practices of the Chumash Indians and if they had cooperative marketplaces. This includes analyses of ethnographic, ethnohistoric, and archeological data about the Chumash, and to a lesser extent, information about the surrounding southern California Indian groups. This review is comprehensive, considering all sources of information. The analyses of the data are qualitative.

As part of this discussion, I concentrate on traits significant to identifying market economies and their management. These include population densities and settlement hierarchies; subsistence strategies, including storage; modes of transportation; regional leadership; sanctions and punishment; shell beads as money; regularly scheduled ritual gatherings; craft specialists; and types of trade.

A wealth of ethnographic and ethnohistoric information on the Chumash Indians provides excellent context along with a robust archeological record of bead use and production. Most ethnographic information is from the notes of the well-known linguist and ethnographer John P. Harrington (Klar, 1991). These data suggest that the Chumash in the Santa Barbara Channel region exhibited numerous traits of transegalitarian societies at European contact (Arnold, 1992; King, 1990; Erlandson, 1994; Gamble, 2008). Early historic descriptions indicate that the Chumash were flourishing at the time of European contact, with dense populations, as many 60–800 people or even up to 1,000 in towns and villages (Gamble, 2008, Figure 6). Within these settlements, large houses would often be clustered together (Figure 1). In larger villages more than one chief was often recognized at a given time (Gamble, 2008).



FIGURE 1
Painting of Chumash villages, houses, and plank boats (*Tomols*) by Russell A. Ruiz.

The Chumash Indians in southcentral California are an ideal group to look at early economic structures because they have a history of bead production and use that span approximately 8,000–10,000 years (Fitzgerald et al., 2005; Gamble, 2020), making it one of the longest continuous bead-making traditions in North America. The Chumash used a wide variety of materials for bead production, including bone, stone, and multiple species of mollusks. Shells or mollusks were by far the most common material used for beads and are the focus of this paper. Beads were integral to Chumash culture, serving not only as adornment but also as a currency. Evidence from mitochondrial DNA, archeology, osteology, and linguistics indicates a long-standing presence of the Chumash in the region, with little to no significant population replacement over the past 7,000–10,000 years (Erlandson, 1994; Johnson and Lorenz, 2006, p. 33; Golla, 2011; Gamble, 2017a). This continuity allows archeologists to explore the long-term production, distribution, and use of shell beads and their use in open marketplaces.

Linguistic background

Chumash is a language isolate, although it was once thought to be affiliated with the Hokan language family (Golla, 2011, p. 194; Figure 2). The “languages” of the Chumash are considered to be a “close-knit independent family” (Golla, 2011, p. 194; Figure 2). Golla (2011) suggests that Obispeño and the other Chumash languages are so different that they were probably mutually unintelligible. This may have resulted in certain types of trading patterns. Golla also proposes that intercommunication between the Island Chumash and the mainland speakers of Barbareño and Ventureño varieties was difficult, as well as communication between speakers at the geographical extremes.

Subsistence and storage

The Santa Barbara Channel area between the Northern Channel Islands and the mainland (Figure 3) was an especially significant region for the Chumash due to a highly productive marine ecosystem because of an extensive coastal upwelling system (Kennett et al., 2007). The coastal Chumash subsisted primarily on wild plant foods, such as acorns, as well as marine products, such as shellfish, fish, and sea mammals. In the interior, land mammals such as deer and rabbit were important, in addition to plant resources. Birds were also important for subsistence.

The Chumash stored foods, primarily plant foods, but in addition preserved fish and meat by drying it. Acorns, as well as many wild plant remains, could be stored for several years. Anderson (2005, p. 4) underscores that California Indians throughout the state ensured that moisture, bacteria, and fungi were deterred in storage facilities through ingenious methods such as waterproofing the granaries through shingling their exterior. They were also able to keep birds and small animals out of the granaries by weaving them very tightly and placing them in special locations. In addition, insect repellants, such as mugwort (*Artemisia douglasiana*), were effectively used in the interiors of granaries. These measures allowed the Chumash and other California Indians to store foods for years.

The Chumash also managed their environment through methods like controlled burns to enhance terrestrial resources (Timbrook et al., 1982; Anderson, 1993; Crespi, on August 20, 1769, in Brown, 2001, p. 419–421; Glassow et al., 2007; Gamble, 2008). These practices not only improved the yield of many plants, such as grasses, but also opened up habitats so that deer and other important terrestrial fauna could flourish.

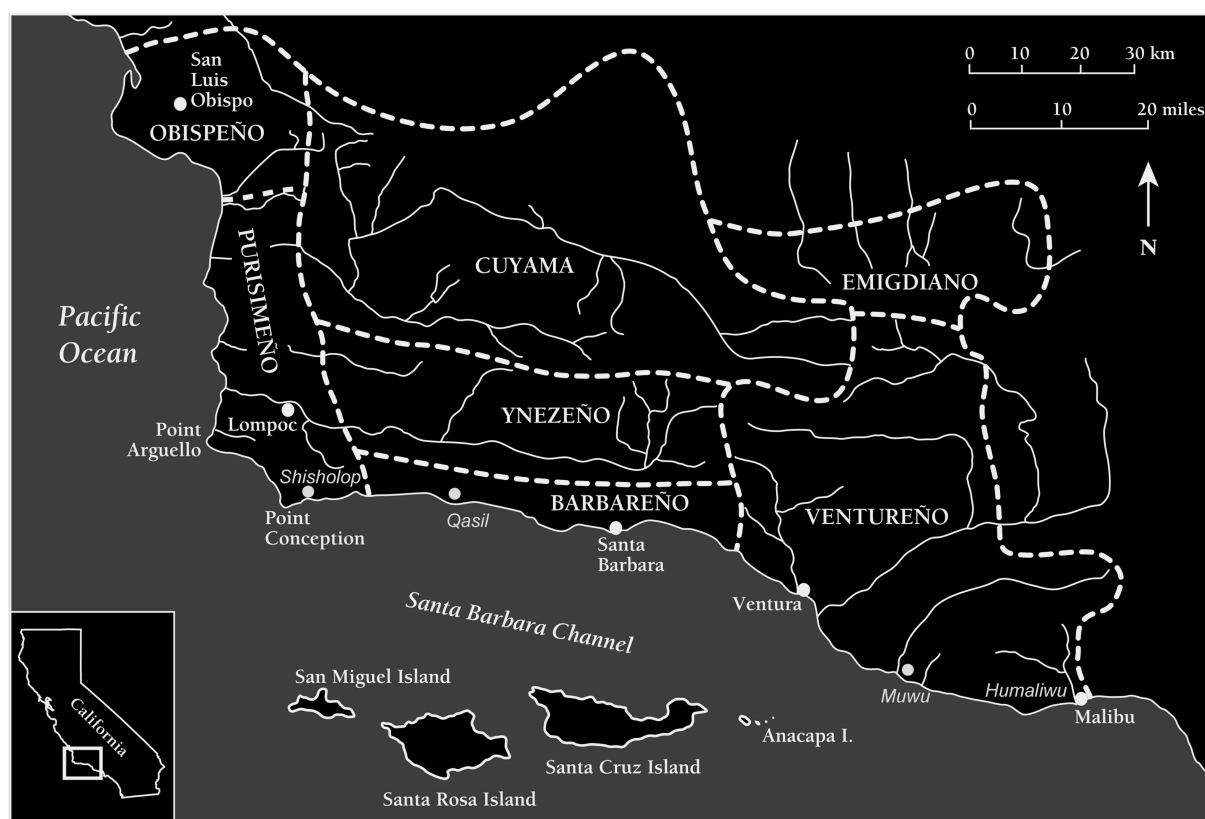


FIGURE 2
Map of Chumash languages.

Father Juan Crespi, the priest on the Gaspar de Portolá 1769/70 land expedition to Alta California, recorded some of the most accurate and earliest historic evidence for Chumash storage (Brown, 2001). This trip was the first land expedition in Alta California, making it especially important because European colonization had relatively little impact on the Chumash in 1769/70 compared with later. Crespi noted that the Chumash houses were covered with accumulations of dried fish as well as fresh fish. Moreover, Crespi noted many outdoor granaries where food such as seeds, acorns, and fish were stored.

Although the Chumash had reliable foods available throughout the year, they were not evenly distributed. For example, the Chumash on the Northern Channel Islands lacked some of the resources available on the mainland (King, 1976; Erlandson et al., 2019). This uneven distribution of resources is discussed below in the section on trade.

Shell beads, their production, use, and distribution

The Chumash exhibited considerable sociopolitical complexity and had an extensive exchange network using shell beads as money (Gamble, 2020). Some of the best descriptions about Chumash trade and exchange are from the early ethnohistoric accounts in the region, prior to the establishment of the Mission Santa Barbara. One of the most detailed of these was penned in 1792 by Longinos Martínez, who was impressed with the Chumash proclivity for the use of shell bead money and trade.

All these Indians are fond of trafficking and commerce. They trade frequently with the mountain people, bringing fish and beadwork and exchanging them for seeds, *tápalos* of foxskin, and a kind of blanket made of the fibers of a plant resembling cotton, preferring it to their own made of otter. In their trading they use beads for money. The beads are strung on long threads, arranged according to their value. The unit of exchange is a *ponco* of beads, which is two turns of the strings about the wrist and the extended third finger. The value of a *ponco* depends on the fineness and color of the beads, ours being held in the greatest of esteem; it also depends upon their abundance and their price relative to ours. In everything they keep as careful an account as the most scrupulous magnate does of all his money. Their currency is fashioned from a kind of snail shell, broken up and shaped one piece at a time into lentil-like beads, which they drill with our needles and then string, polishing them to the fineness they consider most desirable. The men wear strings of their beads and ours on their heads and around their necks, woven in various patterns. Each man displays his wealth on his head, from which he removes it for gambling or trafficking (José Longinos Martínez in 1792, as translated by Simpson, 1961, p. 54–55).

A 1775 description written by Lieutenant Pedro Fages, a soldier on the 1769–1770 Portola expedition who later became a California governor, corroborated the Chumash emphasis on exchange and that much of their commerce appeared to occur outside of chiefly control.

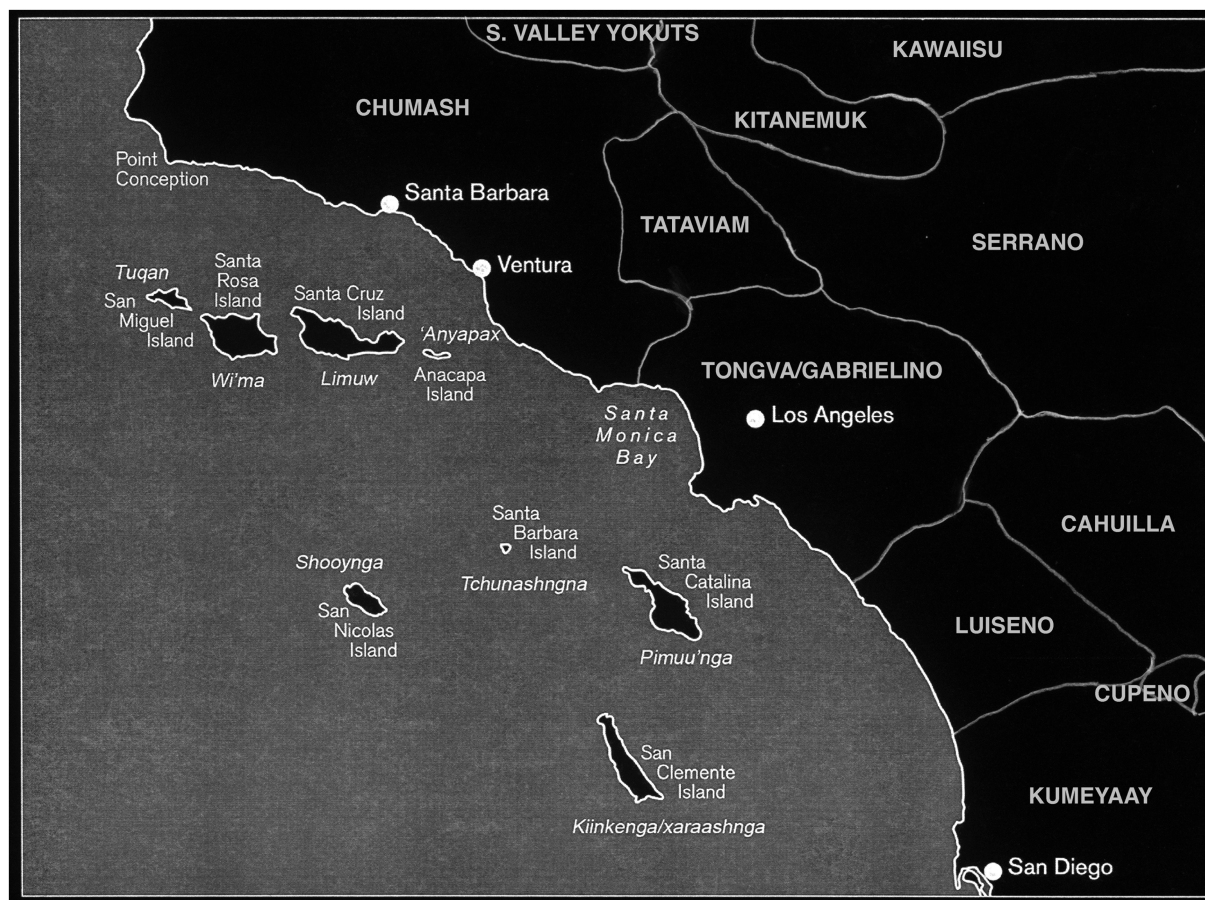


FIGURE 3
Map of the Santa Barbara Channel Chumash and adjacent tribes.

The Indians of all these villages are of good disposition and average figure; they are inclined to work, and much more to self-interest. They show with great covetousness a certain inclination to traffic and barter, and it may be said in a way that they are the Chinese of California. In matters concerning their possessions, they will not yield or concede the smallest point (Priestley, 1937, p. 31).

Shell beads, which were ubiquitous in California, were a significant currency used in the Chumash exchange system. Beads were employed in various contexts and with multiple meanings, depending on the circumstances. Over 22 species of shells were used by the Chumash to produce a wide variety of beads and ornaments, including mussels, clams, abalone, and pectin (Figure 4). One of the most common shells used for beads in the Chumash region and other areas in California is *Callianax biplicata* (traditionally known in the archeological literature as *Olivella biplicata*).¹ Although other species of *Olivella* shells were made into beads, *Olivella biplicata* was the most commonly used shell in the Chumash region. Beads and ornaments

can be considered fluid objects (Ingold, 2010; Hodder, 2012); items that are variable and change their meaning as they move across temporal or spatial dimensions. Use and ownership of shell beads vary and depend on broad concepts about their possession in any given place or time (Gamble, 2016, p. 67). Each society may have different rules or cultural norms about who can use and own beads. For example, the Cahuilla Indians (Figure 3) in the greater Palm Springs area were more restricted in their use of shell beads than the Chumash, with clan leaders keeping currencies for the clan (Strong, 1929, p. 94–96 and 107). The clan leader was easily recognized by characteristic tattoos on their forearms used for measuring the length of strings of shell beads. This special tattoo was given to the clan leader by a ritual specialist; other individuals lacked these. Eventually, a clan leader reciprocated and gave long strings of beads to a neighboring leader when they hosted a ceremony. This served to keep the beads in a continual mode of exchange (Gamble, 2017b, p. 23), similar to the Kula ring in the western Pacific (Malinowski, 1962). These ceremonies were often associated with mortuary rites.

The use and distribution of beads by the Chumash differs considerably from the Cahuilla example. At the time of European contact, the Chumash used shell beads as money to buy both services and goods. The possession and use of shell beads were not restricted as it was for the Cahuilla; instead, anyone who had the resources could use shell beads for purchases. King (1976) was one

¹ Because the term *Olivella biplicata* is so ingrained in the literature about shell beads in California, I use that term for this paper.



FIGURE 4
Various types of shell beads from Santa Barbara County, Santa Barbara Museum of Natural History (photograph by Tacy Kennedy).

of the first scholars to suggest that the Chumash maintained a market economy, using shell beads as a medium of exchange. Scholars conducting research in the Santa Barbara Channel region have agreed for decades that cupped beads (Type K1 in Bennyhoff and Hughes, 1987) were used as money (King, 1976; Arnold, 1987; Bennyhoff and Hughes, 1987; King, 1990; Arnold, 1992; Arnold and Munns, 1994; Arnold, 2001; Gamble et al., 2001; Gamble, 2008; Milliken and Schwitalla, 2012; Gamble, 2020; Fauvelle, 2024, 2025). This consensus is not insignificant given the diversity of researchers. Cupped beads were produced from the callous or thickest portion of the *Olivella biplicata* shell, a part believed to be more time-consuming to make (King, 1976). King suggested that these were more standardized than those used for adornment, were more widely distributed, and were recognized as money about 800–1,000 years ago. I (Gamble, 2020) suggested that a different bead type bead, *Olivella biplicata* saucer beads (Types G2a and G2b, Bennyhoff and Hughes, 1987, Milliken and Schwitalla, 2012), were used as money considerably earlier, about 2,000 cal BP. I analyzed multiple lines of evidence and documented that this bead type was as standardized as the K1 type, was as portable, and was extensively distributed. These types of beads are common in the Chumash area, and there is robust evidence that they were made on the Northern Channel Islands (Arnold and Graesch, 2001) and traded widely (King, 2011). For example, just one individual was interred with approximately 30,000 of these beads (Milliken et al., 2007) in Livermore, California (ALA-413), along with many others at the site. Eerkens et al. (2005, p. 1509) proposed, on the basis of isotopic signatures of a sample of these beads found in Livermore, that they originated from warmer waters south of Point Conception. This points to the Chumash as a strong contender for the producers of these types of beads.

King (1976) was one of the first scholars to document that the Chumash had two forms of craft specialization associated with bead-making, the production of many types of shell beads, and the

production of small drills intended for perforating the holes in the shell disk beads. Both were specialized industries for the Chumash (King, 1976; Arnold, 1987; Arnold, 2001). Indeed, the microlith industry of the Chumash has been considered “among the largest and most intensive practiced in prehistoric North America” (Arnold et al., 2001, p. 113). Massive evidence of the production of stone drills and beads is unique for hunting, gathering, and fishing societies in North America (Gamble, 2020).

Types of exchange and trade items

Blackburn (1976, p. 242) proposed that one significant type of exchange of goods and resources practiced by the Chumash, as well as by other southern California groups, was based on reciprocal ceremonial exchange that occurred at regular intervals during scheduled fiestas. The ritual redistribution of resources that Blackburn documents did not preclude the more open (free market) intervillage exchange described by King (1976). In other words, both redistribution and trade between individuals were common.

King (1976) noted that the Chumash were able to maintain a relatively stable subsistence base by trading shell beads for resources that were not readily available. King references the case of the Northern Channel Islands, where many resources that were on the mainland were not present on some of the Channel Islands. For example, there were no deer on the Northern Channel Islands, so all the deer bone tools and other deer bone had to have been traded or brought into the Northern Channel Islands. Although the idea that the Channel Islands were generally marginal and lacked major resources has been revisited (Erlandson et al., 2019), it is still clear that there were less or none of certain resources available on the Islands.

Ritual gatherings and marketplaces

In order to better understand the contexts of exchange and boundedness, I turn to the locations of exchange which I suggest were the locales of ritual congregations. In terms of the types of settlements that had marketplaces, the linguist H. W. Henshaw noted that some of the larger Chumash settlements were considered “capitals,” where ritual feasts and other special activities occurred (Johnson, 1988, p. 118). This implies that most ritual events were held in large, often centrally situated mainland settlements. All settlements had an area that was set aside for ritual activity (Gamble, 1995, 2008). Below is a description of a ceremonial enclosure and a dance area by Fernando Librado, Harrington’s consultant.

To the west of the *siliyik*, [sacred enclosure] was a dancing ground with meeting areas and fireplaces for families. Every fireplace within the dancing area was a place of honor from which the families would gather to watch the ceremonies and dances. These fireplaces, which were about 25 feet from one another, were built by the local people who knew in advance how many captains and their families would be coming to the ceremonies. They made arches of tules in front of the fireplaces of the families. Some of the fireplaces were also for the local people. Those which were for the use of a captain were marked with a banner (Hudson and Blackburn, 1986, p. 51).

I suggest that the Chumash had open marketplaces when they came together at ceremonial feasts and other events. King (1976) notes that most feasts were on the mainland coast so that Islanders and Indigenous people from the Interior could meet to exchange goods and money; in addition, there are limited examples of them in larger inland and Island settlements. The following statement is based on an ethnographic account that Fernando Librado provided Harrington, highlighting the pattern noted by King:

Unfortunately, despite that dance areas are described in the ethnohistoric accounts, they are rarely recognized by archeologists in the Chumash region because they are so ephemeral. There is a possible dance area on the western end of Santa Cruz Island that, if it is, dates back to at least over about 2,500 years ago (Gamble, 2017a). The Reverend Stephen Bowers recorded data on Chumash dance areas in interior Chumash villages, although the criteria he used to identify



these are not well defined. Bowers visited primarily historic sites, some of which were relatively intact (Benson, 1997). Because there is not a consensus on whether his maps are accurate or not, I chose not to include one in this paper.

The Chumash exchanged a wide type of items besides beads and food. Some of the food resources and manufactured items that have been documented as trade items during the early Historic period are listed in Table 1. One type of artifact that was widely

traded within the Chumash region were objects made from Catalina Island schist, especially large ollas (Figure 6). These distinctive vessels and fragments of them were identified by most archeologists working in the region for the last 150 years. The Chumash did not make pottery, so primarily heated their foods and liquids in baskets. The innovation and use of these cooking implements made cooking much easier, especially for large numbers of people, such as during feasts. These vessels were

TABLE 1 Chumash trade items primarily based on ethnographic and ethnohistoric sources.

Direction of trade and items traded	Source	References
From Islands to mainland		
Beads of fish bone	Herrera 1542	King (1976)
Coral beads	Costanso 1770	King (1976)
Baskets	Font 1776	King (1976)
Shell beads	Tapis 1803	King (1976)
Digging stick weights	Justo 1880s	King (1976)
Stone ollas	Senora Welch at Dos Pueblos Ranch 1880s	King (1976)
Beads	Fernando 1913	King (1976)
Otter skins	Fernando 1913	King (1976)
From mainland (including interior) to Islands		
Acorns and islay	Harrington	King (1976)
Seeds	Tapis 1805	King (1976)
Acorns, seeds, bows, and arrows	Juan Pico 1880s	King (1976) and Davis (1961)
Grass seeds, furs, skins, acorns, and roots	Juan Justo 1880s	King (1976)
Chia and acorns	Fernando 1913	King (1976)
Burden baskets and large baskets	Fernando 1913	King (1976)
From inland to coastal		
Fish, game, seeds and other fruits	Felipe de Neve 1782	King (1976)
Seeds, shawls of foxskins, blankets	Longinos Martinez 1792	King (1976)
From S. Channel Islands to N Islands and Mainland		
Greophytes, seal and otter skins, steatite, red ochre, lead ore, shell beads, acorns, seeds, deer skins		Gill et al. (2019), Davis (1961), Eisen (1904), Longinos Martinez (1938), McCawley (1996, 2002), and Wagner Henry (1929)
From Tongva to Cahuilla, Serrano		
Soapstone, beads, asphaltum, fish, sea otter skins		Bean (1972, p.123)
Ollas, bowls, and smoking pipes		King (1976)
From Cahuilla, Serrano to Tongva		
Food (including seeds) furs, hides, obsidian, salt	Reid (1852, p. 43–44)	Bean (1972, p. 123), Koerper et al. (1986), and McCawley (2002)
From Southwest to Coast, especiallyGabrieleño/Tongva region		
Ceramics, including Hohokam pottery, Cibola White ware, Arizona Red-on-Brown, Sacaton Red on brown, Hopi polychrome		Heizer (1941), Walker (1952, p. 112–116), Forbes (1961), McCawley (2002), and Ruby and Blackburn (1964)
Red ochre, blankets, deer or antelope skin shirts		Earle (2005)
From Coast to Southwest especially from Tongva region		
Shell, shell beads, dried fish, sea otter pelts, and steatite		Davis (1961)
From Yokuts to Coast		
“Honey-dew,” panoche, <i>mow</i> sweet, or carisa cane. Wild tobacco, pine nuts. Fish, obsidian, salt from salt grass, seeds, steatite beads	Woodward (1934, p. 119)	King (1976, p. 306) and McCawley (2002, p.121), Davis (1961), and Timbrook (2007, p. 138–139).

considered a highly valued trade item. The most common time periods for olla usage was the Late Period and early historic Period, especially the latter (Wlodarski, 1979; Romani, 1982; Howard, 2000). An archeological site on the Isthmus on Santa Catalina Island appears to be a distribution center for the trade of these objects because of their abundance there (Wlodarski, 1979, p. 340). Steatite ollas were usually heavy and large, some over 40 cm in diameter (Gamble, 2015), so in order to transport them off of Santa Catalina Island, stable watercraft were needed. Although we do not have systematic counts for the numbers of ollas at the different sites, we do know that there were approximately 56 recovered at *Helo'* in the Goleta Slough, 15 at *Syuxtun* at Burton Mound, and 18 at Dos Pueblos (Harrington, 1928; Gamble, 2008; Brown, 2018). These are all centers and probably had marketplaces. Unfortunately, we do not have systematic accounts of ollas at all the historic villages. If we did, we might be able to take a distributional approach (Hirth, 1998) in the search for archeological evidence of marketplaces.

The significance of watercraft in Chumash exchange

Trade was facilitated by the use of the plank boat between the Channel Islands and between the Islands and the mainland. The Chumash had a fully developed plank boat by about 2,000 years ago that enabled them to navigate up and down the coast and to the Channel Islands (Gamble, 2002). Sometimes these canoes carried as much as 600 pounds of resources, including items such as large swordfish and other fish, as well as trade items such as heavy stone bowls and ollas used for cooking and feasting vessels during the late and historic periods in the region (Figure 6). The Chumash also had a well-established network of trails in the interior areas that were used for trade and other purposes.

Without some type of seaworthy watercraft, it would have been challenging to have maintained the intense level of trade that was observed among the Chumash at the time of early European contact. Except for the neighboring Tongva/Gabrieliño, the Chumash differed

from other California Indians because of the active cross-channel trade that required seaworthy watercraft.

Chiefs and other elites were members of a hereditary craft guild, the “Brotherhood of the Tomol” (Hudson et al., 1978), who owned canoes and acted as sea traders. Members were the people who could afford to commission the labor needed to build a plank boat. They also kept the knowledge about how to build a plank boat highly guarded so that non-members could not build plank boats. Many stories about the dangers of traveling across the channel abound (Blackburn, 1975). Unless they were owners of the boats, islanders were dependent on those who were owners to cross the Channel to get to the mainland or travel to other Islands. Canoes were also used for fishing (Gamble, 2002). According to the notes of John P. Harrington (Hudson et al., 1978, p. 141), members of the guild not only constructed plank canoes but also helped unload boats and received shell bead money for this. Therefore, canoe owners were intermediaries in exchange transactions that involved maritime travel, but their level of control over what was transported is debated.

King (1982) and Arnold (1987) proposed that the owners of plank canoes controlled much of the island-mainland trade. Most shell beads were made on the Northern Channel Islands, but not all. Many were produced on the mainland (Gusick and Gamble, 2013). Adding to this discussion are data from marriage and baptismal registers (Johnson, 1988, 2000). John Johnson used locational analyses to try to determine if trade among the Chumash was primarily based on redistribution and if cross-channel trade was primarily controlled by chiefs. He found that both redistribution and control of cross-channel trade by chiefs were determining factors in the evolution of chiefdom organization among the Chumash. Sewn plank boats were common in the Santa Barbara Channel region after about 2000 ago (Gamble, 2002). Arnold (2001, p. 296) suggestion that chiefs and other elites controlled the release of beads from the Santa Barbara Channel items is difficult to test.

The question that remains is how much control did boat owners have over trade. A clue comes from one of the oral narratives of the Chumash. In this story, a boy secured a boat to go to Santa Cruz Island and back. Once they returned, the boy asked how much he owed the boat captain, who was his uncle. The uncle stated “... whatever you want to give me will be fine. The boy took out his *abalarío* [shell-bead money] and began to measure it out. ‘This is for you,’ he said, ‘and this is for your companion, Mut’” (Blackburn, 1975, p. 139). This narrative suggests that if someone needed to cross the Channel, they could pay the owners or “sailors” for this service. Apparently, the owners or sailors of the canoes made some money on the transaction, but it is not clear that they actually controlled the merchandise that was taken back-and-forth. The idea that the Chumash on the island were controlling the release of shell beads has limited evidence (Gamble, 2002, 2008). There is ample evidence from ethnographic records, and to a lesser extent ethnohistoric, that regularly scheduled and large ceremonial gatherings occurred at Chumash centers, often on the mainland. These events drew people from an extensive area, including both the Channel Islands, the interior region of southern California, and the mainland coast; these occasions afforded opportunities for exchange, where individuals were permitted to sell and buy services and goods. It is unlikely that canoe owners and their assistants could have effectively kept people from taking a canoe from the Channel Islands to attend these ceremonial events. In summary, it is probable that canoe owners received a fee for ferrying people and

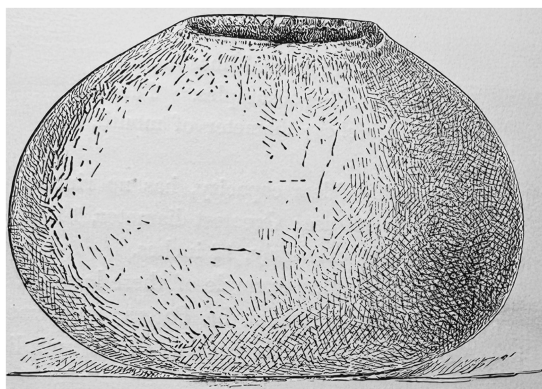


FIGURE 6
Catalina Island Steatite Olla from Dos Pueblos. Greatest diameter, ~36 cm; height, 26 cm (Abbott, 1879, p. 95).

items cross-channel but did not stop people from accessing this transportation or from open-market exchange.

Chumash people in the interior of the mainland, of course, did not have such restrictions and were also part of the exchange networks. In summary, ritual events held by the Chumash provided an opportunity for most people, not just the elite, to conduct business, as well as socialize and find marriage partners, among many other things. The idea that canoe owners might have charged a fee or tax for transport aligns with broader patterns of economic intermediation in societies where transport is monopolized by a select group. Ethnographic cross-cultural comparisons suggest that those controlling scarce or specialized resources often leveraged their position to extract wealth, whether in the form of goods, services, or social prestige, however, there are open questions regarding the extent of elite's enforcement power. While they likely had economic leverage, it is uncertain whether they could fully prevent islanders from finding alternative means of travel—such as makeshift rafts, borrowing canoes from kin, or using social ties to negotiate passage. Nevertheless, given the dangers of open-sea travel and the reliability of plank canoes, their influence was probably fairly significant.

Long-distance trade or transhumance of shell beads is documented for a wide region, not just the Chumash area (King, 2011; Gamble, 2020). Shell beads that are believed to have originated in the Santa Barbara Channel region have been found throughout California, the Southwest, the Great Basin, the Columbia River Plateau, and elsewhere (King, 2011, p. 305–318). For a thorough discussion of the trade of shell beads from the Chumash region and elsewhere throughout the American West, King (1976, 2011) provides archeological evidence as well as numerous ethnohistoric sources. Trade throughout California and the Great Basin is also reviewed by Hughes (2011) with an emphasis on archeological items, such as obsidian.

Sociopolitical complexity and trade

The Chumash had elaborate mortuary practices, with some high-ranking individuals, including males, females, and children, buried with thousands of beads and other items. In more rare examples, people were buried in plank boats as well, which were the most expensive items that a Chumash owned (Gamble, 2008, p. 208). Cemeteries were often marked with painted poles and whale bone, while day-to-day activities usually occurred in different places. The Chumash also recognized special ceremonial spaces where feasts occurred, with dancing, music, and singing occurring in special sacred enclosures.

The Chumash were some of the only hunter-gatherers-fishers in the world that had regional chiefs who wielded power beyond their own settlements. In terms of political organization, each large Chumash village had a hereditary chief (*wot*) and regional chiefs with jurisdiction over several settlements (King, 1969; Blackburn, 1975, 1976; Brown, 2001; Gamble, 2008). Some villages had more than one chief and were considered political centers (Johnson, 1988). According to mission register research, an early account by Crespi, and additional documentation, some Chumash chiefs practiced polygyny, and apparently, others did not (Brown, 2001; Gamble, 2008; Johnson, 1988). Chumash chiefs “had an extensive network of marriage partners and other kin in settlements that were often situated in

different environmental zones and in large, important coastal centers (Gamble, 2008, p. 199). Marriage ties between chiefs' families at political centers is well documented (Johnson, 1988; King, 2011). Chiefs provided ritual paraphernalia for ceremonies and ensured that the visitors were fed and, therefore, were integrally engaged in ceremonial life. Women could be chiefs in traditional Chumash society but rarely were compared with male chiefs (Harrington, 1942, p. 33; Hudson et al., 1981, p. 31; Johnson, 1988, Table 6.6).

In addition to chiefs, there was a retinue of specialists that aided the chief in many pursuits (Blackburn, 1975, 1976; King, 1969; Walker and Hudson, 1993; Gamble, 2008). One significant consortium of specialists among the Chumash were the *'antap*, a group of chiefs, their families, and certain high-ranked associates. This assemblage of ritual specialists danced and performed rituals at public ceremonies, among other duties (Blackburn, 1976, p. 236–238). Most major settlements had an *'antap* society of 12 members who were initiated into the organization when they were children. A family had to pay a relatively large amount of shell bead money as a membership fee. Chiefs and their families were required to become *'antap* members. There was also an *'antap* organization that existed at a provincial level. This elite group met in a capital town to monitor the ceremonial, religious, and other activities that included the settlements within the province (Hudson and Underhay, 1978, p. 29; Hudson et al., 1981). Members of the *'antap* society used large deer bone tibia whistles (Figure 7) during ceremonies; this allows researchers to identify *'antap* in the archeological record (Hudson et al., 1981, p. 41; Hudson and Blackburn, 1986, p. 354; Corbett, 2004). In his systematic study of deer bone tibia whistles, Corbett (2004) found that they appear in the archeological record during the late Middle Period, about 1,000 years ago.

Sanctions

The Chumash chief had a particularly close relationship with the ceremonial leader, the *paxa* (Blackburn, 1976). The *paxa*, who was next in power to the chief, oversaw ceremonial events, collected fines and offerings, and made announcements. The *paxa* and the *wot* or chief sometimes with help from the poisoner (*altipátishshi*), organized and



oversaw the ceremonies where people were expected to bring money, food, and additional resources to help fund the participants such as the dancers and the musicians (Walker and Hudson, 1993, p. 55). Sometimes they were joined by the ‘*alaqtsum* or “he who kisses,” who often led a search party at a feast if something was stolen or if the attendees did not bring adequate resources to support the event. An example of a chief and ceremonial leader working together with the poisoner and “he who kisses” is from the ethnographic account of Fernando Librado, a Ventureño Chumash elder and one of Harrington’s key consultants.

The search party consisted of a *paha*, the twelve ‘*antap* ministers of the *siliyik*, and an ‘*alaqtsum* who was the captain of the searching party; his title means “he who kisses,” for he would make such a sound with his lips when he aimed his bow and arrow at the neck of the captain. He would not say a word, just point his bow-drawn arrow at the captain’s neck and make this kissing sound while the rest of the group searched everything. They placed this arrow at the neck of rancheria *wots* only, while everything around the *wot* was searched, no matter to whom it belonged. If anything stolen was found, the *paha* called it to the attention of the local *wot* holding the ceremony, while the *paha* took the thief to his *wot*, where the thief was then seated to the right of the *wot*. Fernando does not know how the *wot* would punish the man, but he says that from childhood the Indians teach their children against stealing. The only punishment from heathen times Fernando recalls is killing a woman for adultery (Hudson et al., 1981, p. 41).

This passage corroborates evidence that the *paxa* was instrumental in implementing sanctions against those who committed crimes. One example of leaders placing pressure on participants at marketplaces or feasts is from the *Kakunupmawa*, or the Winter solstice ceremony (Hudson et al., 1981, p. 6). At this event, individuals paid debts from the previous year. If they could not pay the debt but had a commodity that could be sold, they sold it right there and were given money, which then could be given to the *paxa*. This shows that individual transactions occurred at these feasts, providing additional evidence that these ritual gatherings also served as marketplaces.

Although adultery is mentioned as one type of behavior where harsh sanctions were applied, it is difficult to know if this was the case prior to European contact or if this was Spanish morality imposed on the Chumash. Adultery is provided as one reason for warfare among the Chumash. It certainly is also possible that in an attempt to curtail feuds and conflict, chiefs may have imposed harsh sanctions, such as capital punishment for adultery, to reduce the incidence of warfare. It is clear from information from Fernando Librado, that capital punishment was not popular. Librado mentions capital punishment in the following passage:

They unanimously wanted *Kwaiyin* to become the new *wot* of *Muwu*, asking him to do away with capital punishment, for that had been the cause of the war at *Muwu*. *Kwaiyin* told them that as to the matter of capital punishment, they should forget the past. If the people thought that capital punishment was not the proper thing, he, the *Kwaiyin*, would do away with it, thereby abiding by the will of the people. The people were very much dissatisfied with capital punishment (Hudson et al., 1981, p. 17).

As a result of the execution of an unfaithful woman at *Muwu* (who was from Tejon) in the previous passage, approximately 400 Indigenous people from Tejon decided to avenge her death and attacked the *Muwu* peoples (Hudson et al., 1981, p. 99). Although the attack was not specifically successful, this narrative addresses the difficulty that one can encounter when meting out punishments.

The bow and arrow were common weapons used to threaten or carry out force among the Chumash, according to ethnographic accounts. Poison has also been mentioned as a means of inducing illness or death in a person (Walker and Hudson, 1993). It is likely that theft was traditionally associated with negative sanctions that were implemented by the chief, the ‘*antap*, and other high-ranked individuals, all of whom participated in market transactions. Many other members of Chumash society had significant political, religious, or economic roles. These include a “lesser” chief (*xelex*) who was common in larger settlements and a messenger (*ksen*) who relayed messages to individuals in surrounding settlements regarding the timing of feasts (Blackburn, 1975, p. 53; King, 1969, p. 41–43). The messenger also was trusted to carry money to other villages when needed (Harrington, 1942, p. 34).

There also was a member of society who specialized in executing people (*alseke* or ‘*eneshesh*), also known as the taker of souls (Hudson et al., 1981, p. 13). Aiding the executioner were judges (*ca canay y al* or *jilicnash*), who determined the timing of feasts and passed sentences ordered by the chief if crimes were committed (Heizer, 1955, p. 189). Also key in determining the timing of feasts was the astronomer or astrologer (*alchuklash*), a shaman priest or doctor who tracked the movements of celestial bodies—stars, planets, and the sun and maintained a 12-month lunar calendar, therefore set the dates of the ceremonies. The calendar was adjusted semi-annually, especially during solstice events, ensuring that ceremonies were in harmony with the natural cycles (Blackburn, 1975, p. 13–15; Blackburn, 1976; Hudson and Underhay, 1978, p. 27–38; Hudson et al., 1981, p. 18–19 and 101–102; Walker and Hudson, 1993, p. 57–58). The tracking of celestial bodies was essential in terms of setting the ritual calendar of ceremonies, therefore the astronomer was of critical significance.

Ritual calendar

Although the Chumash celebrated many rites of passage, they also recognized a seasonal round of ceremonial events that involved regularly scheduled feasts. The Hutash or fall harvest ceremony and the winter solstice ceremony (the *Kakunupmawa*) were the most significant annual ceremonies that the Chumash recognized (Blackburn, 1976; Hudson et al., 1981; Hudson and Underhay, 1978). Both ceremonies were complex, multi-day events that blended spiritual practices, social obligations, and political responsibilities. The ceremonies not only honored the natural world (the earth and sun) but also reinforced social structures and relationships, ensuring the prosperity of the community in the coming seasons. The communal nature of these events, with large-scale feasts and participation, was integral in maintaining Chumash society. These events often lasted 5 to 6 days and included Indigenous peoples who traveled long distances from various portions of the mainland and islands as well as California Indians from the interior (Blackburn, 1976; Hudson et al., 1981). This included groups such as the Tulariños (Yokuts), who are from the Penutian stock of speakers (Shipley, 1978, p. 83). The Hutash ceremony occurred after the fall harvest of seeds, acorns, and other resources in

August or September (Hudson et al., 1981, p. 104) to honor Hutash, the earth, and its bountiful harvests. The *Kakunupmawa* ceremony was held during the winter solstice and was intended to ensure that the sun would return for the next year (Hudson et al., 1981). Offerings such as shell beads, acorns, and seeds were brought by attendees; these goods were routed through the chiefs, with visiting chiefs providing the contributions to the chief of the host settlement in a form of redistribution. These gifts symbolized the renewal of social and political bonds and were also intended to help defray part of the expenses that were incurred in hosting such a ceremony. The *paxa* received the offerings at the winter solstice and then shared them with the host chief. These ceremonies, in addition to others such as the mourning ceremony, involved large feasts. Many fewer public ceremonies observed by the Chumash also had a feasting component but on a smaller scale than the public ones.

Cooperative marketplaces among the Chumash

The focus of this paper is on marketplaces and whether they are based on self-serving actors who do not promote cooperation, or if the participants create and maintain institutions to inhibit overexploitation and potential depletion of unstable resources. Blanton and Feinman (2024, p. 6) describe the approaches in the following passage: "...while common-pool systems limit participation to a particular, usually socially homogenous, group of persons all known to each other, open marketplaces are 'hybrid spaces' (Yang, 1998, p. 165), in which large crowds of buyers and sellers from diverse social and linguistic backgrounds engage in anonymous person-to-person commercial transaction, including with persons not likely to be intimately or reputationally known to them." In these hybrid spaces, the aim of building institutions is to avoid self-serving actions where opportunistic individuals threaten "the vitality of valuable market institutions" (Blanton and Feinman, 2024, p. 6). The four strategies that are frequently implemented by cooperative leaders and individuals who try to encourage open market participation are altruistic punishment, marketplace governance, synchronization, and boundedness (Blanton and Feinman, 2024, p. 6). Before moving forward with a discussion of the strategies the cooperative leaders want to encourage for open market participation, I want to emphasize that many lines of evidence for the Chumash suggest that they created "hybrid spaces" in their open marketplaces where people from extensive regions and different cultural and linguistic backgrounds were encouraged to participate. They have a history of inviting diverse groups of people to their feasts where marketplaces occurred, often people who spoke different languages.

Some Chumash sanctions can be viewed as a form of altruistic punishment that can bring benefits for the group but may be costly personally. The public chastisement of swindlers is one example (Blanton and Feinman, 2024, p. 6). Participants must be open to defending their common interests at a price. "Altruistic punishment means that individuals punish, although the punishment is costly for them and yields no material gain" (Fehr and Gächter, 2002, p.137). Among the Chumash, there were a number of individuals who protected the marketplace, including the leader of the search parties at a feast, the *'alaqtsu*. This is the individual who would aim their small bow and arrow at the neck of a captain if they did not bring the

appropriate money to a feast. The search party also consisted of the *paxa* and twelve *'antap* members. Although the example for the Chumash is focused on the redistributive efforts at feasting events, individual exchange also occurred at these, and it is possible that search parties also policed the Chumash marketplaces for any offenders. There are similar individuals who ensure that marketplaces are safe among tribal markets in Morocco (Fogg, 1942). In the Yokuts area, Gayton (1930, p. 410–411) suggested that a chief who made decisions that were considered unfair or that benefited the chief too much was ignored (see also Boehm, 1993 for examples of chiefs and others sanctioned by the populace for inappropriate behavior, often viewed as self-aggrandizement). In the Yokuts case, Gayton points out that although a chief inherited their position, the retention of that position depended on the chief's conduct. Popular opinion can turn against a chief who makes unfair decisions, or is suspected of self-aggrandizement. In Stanish's (2017) terms, this is an example of conditional cooperators. And as noted by collective action theorists (Blanton and Fargher, 2008; Feinman and Fargher, 2008; Carballo et al., 2014; Demarrais and Earle, 2017; Stanish et al., 2024), although leaders might benefit from certain self-aggrandizing actions, they may need to consider benefits to the whole group if they want to succeed and maintain their position and authority.

One type of regulatory action overseen by market managers within the delineated space of the marketplace is paragovernance (Blanton and Feinman, 2024), where instead of a regional chief controlling the marketplace, parapolitical authorities such as trading organizations are in charge. Examples from diverse regions in Africa demonstrate how traditional authorities are often the first groups of people that resolve marketplace disputes. Among the Chumash, this includes the *'antap* society, many members of which have a specific purpose in maintaining market cooperation, such as the *paxa*. In addition, "he who kisses" or the *'alaqtsu* is directly overseeing marketplace behavior as they are the leaders of a search party at feasts if something is stolen, if people are not paying the proper amounts, or other uncooperative behavior. When needed, the *'antap* and *paxa* search the individuals associated with the visiting *wot* while the *'alaqtsu* points his bow and arrow at the neck of the *wot*, searching many individuals. This is an example of paragovernance, where managers of the marketplace ensure that everyone is following the appropriate customs. The chief in the Chumash example may be peripherally involved in marketplace management, but primarily works closely with the ceremonial leader to avoid the appearance of self-aggrandizement.

A predictable timetable and a location for sellers and buyers to engage in trade negotiations in a safe environment is another strategy that fosters cooperation in the marketplace (Blanton and Feinman, 2024, p. 7). Regular periodicity for markets in a known location reduces temptations for profiteering and encourages cooperation. If we accept the premise that consistently timed ritual gatherings also served as marketplaces, then there is strong evidence that market events repeatedly occurred. Among the Chumash, the astronomer or astrologer (*'alchuklash*) set the ritual calendar for the most significant ceremonial events, including the winter solstice, the summer solstice, and the Hutash or fall harvest ceremony (Hudson and Underhay, 1978). The *'alchuklash* also identified the fall and spring equinoxes, but it is, it is not clear if they scheduled events at these times too. The *'alchuklash* used a sun staff which is basically a ritual staff with a perforated stone disk, often painted and incised to track the sun (Hudson and

Blackburn, 1986), some of which have been found in archaeological contexts.

The Chumash also had mortuary rituals where large numbers of people attended, as well as other rites of passage ceremonies (Hudson et al., 1981). Some of these events would be planned for certain dates. The existence of a specific specialist that has a primary responsibility to set a ritual calendar reinforces the significance of calendrical rites practiced by the Chumash. In terms of territorialization, things are less clear. It is stated that the Chumash usually held their ceremonies in large mainland villages (King, 1990).

It has been suggested that physical or symbolic boundaries are crucial to a more open cooperative marketplace. (Blanton, 2013, p. 28; Blanton and Feinman, 2024, p. 7). Each large Chumash settlement had a dance ground at the site that was set aside for ceremonial events (Gamble, 2008, p. 115). This is a marked area where trade and other activities most likely occurred. The probability that this portion of the site served as a locale for both ritual and commerce adds credence to the idea that peaceful interactions were promoted. Chumash marketplaces were probably bounded, but these boundaries are difficult to recognize in the archeological record, especially in regions with modern development and intensive agricultural activities.

Conclusion

The Chumash made, used, and traded shell bead money for thousands of years and were one of the best-known Native American tribes to have used a portable and standardized form of currency (Gamble, 2020). The beads identified as money were made from *Olivella biplicata* (*Callianax biplicate*) shells, the preferred shell for money beads. The diameter of the beads and their perforations, along with their morphology, changed over time, making them useful as chronological markers. But most importantly, they inform researchers about the owners' identities, status, social and economic networks, and appearance. Moreover, by studying the contexts and meaning of beads, they can provide additional evidence of early use of money.

The earliest money beads were most likely *Olivella* wall disks, used and traded widely from about 2,000 years ago in California. This earlier type of money bead appears to have been used by the elite at first, but then eventually a wider range of people, including non-elite, had access to them. Beads that appear almost identical to those produced in the Chumash region have been found throughout California as well as the Great Basin, the Southwest, and the Columbia Plateau. Most of these beads were probably not exchanged at local marketplaces. Instead, other means of distribution were used, such as exchange by intermediaries or people traveling. It is well documented that the Mojave Indians of the Colorado desert were intermediaries who traveled long distances to trade for beads with the Chumash (Farmer, 1935; Kroeber, 1925, p. 612; Davis, 1961; Earle, 2005; Smith and Fauvelle, 2015). Individuals passing through foreign lands, who had beads may have been able to use them almost like a passport, to enter regions outside their territory (Gamble, 2011).

Some of the use of shell bead money was in marketplaces in the Chumash region. These were specific locations where ritual gatherings occurred on a regular basis. Based on ethnographic and ethnohistoric sources, I propose that special ritual vicinities within

large village sites were not only sacred areas but also were used as marketplaces. In addition, a type of altruistic punishment apparently existed in marketplaces of the Chumash, as they had a number of individuals that insured safety and guarded the market, including the leader of the search parties, the '*alaqtsum*, "he who kisses," in addition to the poisoner. Nevertheless, the key people who protected the marketplace did receive some funds for their oversight, but at the same time they were risking their safety by taking on the role of marketplace supervision, especially someone like the poisoner. Paragovernance, a regulatory action provided by managers within the bounded space of the marketplace can also be seen in the individual that was identified as the '*alaqtsum*. Although the *wot* and *paxa* had roles outside of the marketplace, the '*alaqtsum*'s primary role was the captain of a search party at a ritual gathering. Synchronization is also observed among the Chumash with the role of the '*alchuklash* or astrologer who sets the ritual calendar for the year. They also had messengers that sent the invitations for ritual gatherings. The Chumash recognize separate ritual spaces, or bounded hybrid locations, especially in larger villages where dance areas and other ceremonial features were present. In summary, the Chumash have the main traits of open marketplaces where cooperation is encouraged through marketplace strategies that reduce theft and greed. At the same time, the Chumash had a far-flung exchange network using shell beads as money. Some traders probably attended marketplaces and then took beads and other items when they left. Nevertheless, it is likely that intermediaries and others also conducted economic exchange outside of the marketplace.

The Chumash serve as a significant example of how marketplaces develop among transegalitarian societies. Although the Chumash lacked elaborate formal marketplaces that can be identified clearly in the archeological record, there is ample evidence of shell bead production and use that includes the identification of a currency. The robust ethnohistoric and ethnographic records help to fill in the gaps about the physical marketplaces. In summary, the Chumash exhibited key characteristics of a cooperative marketplace as outline by Blanton and Feinman. More detailed studies of Chumash trade and structural elements at major archeological sites should serve to further this line of research in the future.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

LG: Writing – original draft.

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