

Disentangling Colonial Encounters

Survival is a simple concept and a complex act. Day-to-day decisions that affect such endurance draw on the past through experience and look to the future for vindication. But they are executed in a present often fraught with fear and uncertainty. Our lives are dominated by the iterative performance of tasks that provide for our nourishment and protect us from multiple threats to health and happiness. This daily demonstration of purpose and resolve addresses both the mundane and the extraordinary. And in the latter case, the effort to survive requires not only recognizing new enemies but also finding the means to withstand their varied assaults. Some adversaries are overt and make no attempt to hide their intent to control the resources, minds, and bodies of others by coercion or force. Whether they invade in large numbers or small, their will to prevail is fostered by a belief in their right to proceed and is empowered by technology equal to or better than that which they face. Other enemies are more insidious, creeping unseen into communities that awake to the smell of death and the trauma of loss. Such subtle destruction is wrought not at the hands of men with weapons but, rather, by microscopic biological warriors that invade human tissues and organs. In the wake of devastation, these two aggressive forces test both the fortitude of those assaulted and their commitment to their way of life. Survivors are sometimes stronger and often wiser for enduring the experience, but a high price is paid for such wisdom. And the value of the lesson is fully realized only if

the knowledge is incorporated into the practices of daily life and if the experience is passed on to future generations through text, story, song, and tradition.

Yosemite Indian history resounds with such experience, and their story of survival provides a lesson to us all. Like other native people throughout North America, the Yosemite Indians faced aggression on both of these fronts in colonial encounters with European people in the late eighteenth and early nineteenth centuries. The first adversary was fatal disease that was inadvertently introduced from a distant colonial outpost. The second was physical incursion into their traditional territory in the central Sierra Nevada of California by men determined to usurp their ancestral claim to the land and its resources. Yosemite Indian population was severely reduced—and their resolve was repeatedly tested—by both of these foes. But they survived these assaults and maintained their traditional ways, as revealed in native oral history, written historical accounts, and archaeological evidence of past lives and people.

Their particular story—encompassing the dual forces of disease and violence—is a microcosm of the process of European colonialism in the Americas, Australia, and the Pacific Islands in the four centuries following Columbus's landfall in the Caribbean in 1492. Colonialism, in this sense, extends well beyond a simple reference to colonies linked to a distant homeland or to the practices and characteristics of colonists in such settings (Gosden 2004). Rather, it both embraces and symbolizes a systematic global process that refers especially to the spread of European empires, economies, culture, values, diseases, and material goods since the late fifteenth century. *Colonialism* is a politically charged term, as well as a social process that left a devastating legacy for indigenous people around the world. One need only undertake a cursory review of history to realize that the outcome of colonialism in other places and times was often quite different than that of Yosemite Indians. Many other indigenous peoples did not endure in the face of enemies intent on their disenfranchisement or destruction. Either they did not survive as communities, or they lost their connection to their land and traditions in the wake of one or more colonial assaults. In light of these various histories, we are left to ponder why outcomes were so different when the colonial assaults appear much the same. We are challenged to disentangle the dual assaults of colonialism and understand each in much greater detail to find the answers we seek. And given the relevance of this colonial heritage to past peoples and to

modern life, research regarding the role that introduced infectious diseases played in both the process and outcome of colonialism for people such as the Yosemite Indians takes on special significance.

Scholarly deliberation on the biological assault of colonialism has focused on three issues: the timing, the magnitude, and the cultural consequences of fatal epidemics. With respect to timing, cultural anthropologists, anthropological archaeologists, historians, and demographers continue to debate whether introduced infectious diseases spread throughout the Americas relatively quickly after the Columbian landfall and preceded face-to-face encounters between colonists and indigenous people or whether the process unfolded later and much more slowly, encompassing multiple direct introductions with more geographically limited impact in any one case. For early pandemic spread, introduced Old World diseases would have been transmitted unwittingly by native intermediaries through a sequence of contacts such as existing trade relationships or flight in the wake of disease outbreaks. Assessment of the magnitude of resulting mortality has drawn on evidence from these disciplines as well as the contributions of epidemiologists. These latter researchers have addressed not only the mechanisms, parameters, and possibilities for the spread of various pathogens in diverse physical and cultural settings, but they have also estimated the potential severity of population loss due to various contagions. Although these studies suggest potentially significant depopulation with exposure to a particular fatal pathogen, such theoretical possibilities must still be assessed with real-world data for specific indigenous groups to determine the magnitude of depopulation in each case. In addition, only oral history and archaeology can provide specific data about demographic consequences if introduced disease preceded direct encounters with colonists and reveal if populations rebounded relatively quickly after this assault. Since cultural consequences are intimately linked to both timing and magnitude of population decline, the causal relationship between demographic collapse and cultural change is sometimes tenuous and contentious as well. In this case, anthropologists, archaeologists, indigenous scholars, and historians have all brought their particular knowledge to bear in an effort to determine cultural outcomes for various native groups, including consequences for sociopolitical systems, rules of kinship and affinity, marriage practices, household organization of labor, and settlement patterns.

Given the debate and uncertainty on key issues of timing, magnitude, and cultural consequences of depopulation, the Yosemite Indian

story stands as an important example of native experience in the face of colonial-era assaults. While their traditional organization as a small-scale, nonagricultural, and residentially mobile population was far from unique, these characteristics set them apart from nearly all other native groups that have been subject to archaeological assessment of colonial-era depopulation in North America. Thus, the persistence of Yosemite Indians informs our understanding of both native history and culture in North American colonial encounters. Their experience and actions expand our view and thereby help to clarify and define the process of European colonialism itself, as models of colonialism variously ascribe a central role to introduced disease or stress intentionality, colonial power, and native resistance. Preserved in words and objects, the Yosemite Indian story encompasses all of these phenomena and reveals the mechanisms of European colonialism from a native perspective. In so doing, their story underscores the significance of both intentional and unintentional acts and the consequences to indigenous experience and survival in such circumstances.

THE CULTURAL LANDSCAPE OF COLONIAL NORTH AMERICA

Beginning in the 1500s, the native people of North America were forced to contend with introduced disease or violence, or both, during encounters with European explorers, missionaries, settlers, trappers, and traders. This drama played out over the next 350 years—a general period referred to herein as the colonial era¹—as successive waves of intruders and their biological agents swept across different regions of the continent. The reasons that Spanish, English, French, and other Old World colonists came to the Americas were diverse. Some sought to save indigenous souls and exploited native labor to build and maintain ambitious mission systems. Others searched for gold or acquired furs destined for Europe, often trading with native people to procure these goods. Still others established agrarian communities and carved out fields, pastures, and homesteads within traditional Indian territories in the quest for self-sufficiency in the New World. These and other efforts sometimes depended upon the labor of enslaved Africans, who were themselves colonists of a sort. European colonists' relationships with native people varied greatly, depending on the purpose of their enterprise, their need for native labor or partners, their continued connection to their homeland, and their short- or long-term intentions in

North America. These factors, in part, also determined the extent to which their activities affected native life and culture and the nature and pace of such impact.

The Indian people who were parties to these encounters were similarly diverse, and their experience and traditions constituted the complementary component contributing to the process and outcome of colonial encounters. Language, religion, customs, and social structure differed significantly between these groups, as did their interaction with and response to the invasion of Old World people and disease. In the Southeast and middle Mississippi River valley, multiple chiefdoms were forged around monumental civic-ceremonial centers that were interconnected by long-distance exchange networks that dealt in symbolic items and exotic materials available only to elite individuals. The tiered settlement structure of these hierarchical societies also included lesser towns and community centers, satellite villages, and farmsteads. An agricultural economy based on maize and other cultivated plants supported priests, chiefs, lesser political officials, craft specialists, and commoners, who together constituted populations numbering in the thousands. In the northeastern forests, midwestern plains and prairies, and southwestern deserts and mesas, groups were generally organized as tribes, with relatively little differentiation in the status of individuals other than by age and gender. Multiple kin groups were represented within communities, and authority beyond such groups was often temporary or situational, specific to a task requiring community coordination. These tribes often occupied fortified or otherwise defensible villages comprised of hundreds and sometimes even thousands of individuals. Like the chiefdoms of the Southeast, tribal groups generally engaged in farming, and maize was a major component of their diet. Similar communities were present along the northwest coast of North America, although here, autonomous groups were smaller, numbering only in the hundreds, and individuals relied on abundant wild food resources for their subsistence. Salmon was particularly important in the diet, and rights to rich fishing locales along major rivers were held by specific kin groups. Through such control, some lineages acquired more resources and prestige than others, but no central authority existed beyond each village. Elsewhere in the West and in the Far North, native groups were organized into bands. These small, kin-based communities made their living from hunting and gathering wild resources from the land and, in some areas, harvesting marine mammals, fish, and shellfish from the adjoining coastal waters. Such foodstuffs were distributed unevenly

across the landscape, however, and it was not unusual for households or groups to relocate during the course of a year to take advantage of resources available in various environmental zones during different seasons or to follow migrating animals.

Within this varied landscape of colonizers and native people, the intent of European invaders was diverse but unambiguous. Whether seeking to exploit people or to obtain resources, the goals and actions of specific intruders are revealed in official documents, mercantile records, and personal journals of the time. But the response of native people to such intentional encroachment or aggression—and the role of introduced infectious disease in colonial encounters—is often more difficult to discern. Historical documents either do not address the native side of the encounter, or else they only present events involving indigenous people from the perspective of colonists. There is often no indication of how these processes played out, what the motivations and efforts of native people were in this dynamic setting, or how daily lives of Indian people were affected. One shortcoming of documentary records is especially glaring: there is no account of the colonizers' influence on Indian people prior to their physical presence within a native territory, particularly with respect to the demographic and cultural impacts of European diseases that may have preceded actual occupation (see Milner et al. 2001). Thus, only a very general, incomplete, and possibly inaccurate picture of colonial encounters and their effects on native people can be drawn from written records. To complete this portrait, these data must be augmented by native oral histories and by information derived from archaeological investigations of Indian life and death.

DEBATING THE COURSE AND IMPACT OF INFECTIOUS DISEASE IN COLONIAL ENCOUNTERS

In broad brush, both anthropological and historical studies acknowledge the potentially profound effect of disease-induced population loss on Native American cultures during the colonial era (e.g., Alchon 2003; Brose et al. 2001; Cook 1976; Crosby 1986; Dobyns 1983; Fitzhugh 1985; Larsen 1991; McNeill 1976; Phillips 1993; Ramenofsky 1987; Ramenofsky et al. 2003; Smith 1987; D. H. Thomas 1989, 1990, 1991; Wolf 1982; see also Diamond 1997; Mann 2005). It is clear that some native groups suffered a staggering number of fatalities from a variety of infectious diseases to which they lacked biological immunity. In North

America, this impact began as early as the 1520s in the Southeast and was initiated no more than a century or two later in the Southwest, Northeast, and upper Midwest (Dobyns 1983). Brought from the Old World, these foreign killers may have been introduced and reintroduced among native people over successive generations. Diseases such as smallpox, measles, influenza, typhus, scarlet fever, and whooping cough were endemic to Old World populations (Bianchine and Russo 1995; Ramenofsky 1993; Ramenofsky et al. 2003). Therefore, in European communities, if no new genetic strains of pathogens developed, each outbreak resulted in the death of only a few particularly vulnerable individuals relative to overall population size. In contrast, mortality in previously unexposed Indian populations reached epidemic proportions and could exceed 90 percent for some pathogens, since contraction of the disease (i.e., morbidity) was as high as 100 percent (see Bianchine and Russo 1995; Dobyns 1983; Ramenofsky 1987; Stearn and Stearn 1945).² Such disease struck down not just the very young and old but also men and women in the prime of life.

These statistics on morbidity and mortality derive primarily from epidemiological studies of both contemporary and historic populations around the world (see Ramenofsky 1987); thus, this research serves to augment the broad view of historical and anthropological studies of colonial-era introduced disease within Native American groups. Epidemiologists have also considered the nature of pathogens typically introduced to the New World (e.g., viral, bacterial, or protozoal) and their transmission (e.g., airborne or vector organism) to estimate both the potential speed with which a contagion could have spread and the subsequent persistence of a pathogen within a population after introduction. Population characteristics of the host community, including genetic diversity, existing disease load (e.g., endemic diseases), nutrition, population size and density, and geographic or social isolation, affect both of these facets of epidemic disease.³ For example, epidemics are more likely in large populations that contain a sufficient number of susceptible individuals to sustain the outbreak, while less sanitary conditions typical of crowded living conditions also facilitate the spread of infectious airborne diseases.⁴ Since these and other factors related to specific pathogens introduced as part of the “Columbian exchange” have been discussed at length elsewhere (e.g., Alchon 2003; Bianchine and Russo 1995; Ramenofsky 1987, 1993, 1996; Ramenofsky et al. 2003), these data are not reiterated here. Still, it must be emphasized that while epidemiological studies are

consistent with the broad picture of disease-induced native depopulation developed from historical and anthropological data, they also suggest complexity and the subtle interplay of multiple factors, including the potential for different strains of the same pathogen within the Americas. Thus, the specific pathogen responsible for any given colonial-era epidemic should be determined, if possible, since this had consequences for exposure to, duration of, and morbidity and mortality deriving from a disease event.

Such epidemiological complexities contribute to the fact that, in detail, the picture of the spread and impact of colonial-era disease among native people becomes much less clear and more contentious, fueling the debate among anthropologists, archaeologists, and historical demographers about just how significant disease-induced depopulation was to the colonial experience of specific native groups (e.g., Brose 2001; Dobyns 1983, 1991; Milner et al. 2001; Thornton 1987, 1997, 2000; Ubelaker 1992, 2000). Especially contentious is the timing of epidemics in various regions and, by extension, the potential size of native populations prior to direct encounters with colonists (e.g., Henige 1998).⁵ Ethnohistorian Henry Dobyns (1966, 1983, 1991) has been most vocal in arguing that massive population decline resulted from the introduction of pathogens in widespread areas of North America prior to direct contact between native and nonnative people. Some Indian people may have contracted European disease directly from interactions with colonists, but many epidemics likely resulted from the subsequent passage of nonnative pathogens from one native group to another along traditional trade routes or via native people fleeing devastation.⁶ Epidemiological studies confirm this possibility, although the nature of the pathogen involved made specific diseases more or less likely to be transmitted over long distances (see Ramenofsky 1987, 1996; Ramenofsky et al. 2003) and thus disposed to precede face-to-face encounters between colonists and Indians.⁷

This pandemic perspective follows the work of physiologist and historical demographer Sherburne Cook, who was one of the first scholars to suggest significant loss of life in California due to native interactions with Ibero- and Anglo-Americans. Cook (e.g., 1976) sought to quantify such losses and examine the multiple factors, from disease to violence, that contributed to such decline. His study did not significantly alter the quantitative estimates of California native population at European contact presented earlier by anthropologist Alfred Kroeber (1925, 1934, 1939), but Cook's work was a departure from the dominant view that

Indian people—and therefore Indian culture—had not suffered significant change during the colonial era. Dobyns's (1983, 1991) perspective of catastrophic depopulation prior to direct contact with nonnative peoples took Cook's notion even further (see also Crosby 1986; Preston 1996; Ramenofsky 1987) and provided quantitative estimates of pre-contact population size well in excess of those proposed by any other researcher (Dobyns 1966, 1983).⁸

Because this catastrophic view relies implicitly or explicitly on a relatively “disease-free” native world or “virgin soil” spread of introduced disease (Crosby 1986) without subsequent significant population rebound, other researchers have been somewhat skeptical of this argument. Computer simulations of demographic outcomes in such situations suggest that even significantly affected populations could have rallied back after population decline from epidemic disease (e.g., Thornton et al. 1991), and a few archaeological and ethnohistoric studies also support this conclusion (e.g., Galloway 2006:16). Many bioarchaeologists also point to evidence for the prior existence of deadly diseases among native populations (e.g., Baker and Kealhofer 1996; Larsen and Milner 1994; Ubelaker 2000; Verano and Ubelaker 1992; see also Cook and Lovell 1991), thereby refuting the “Garden of Eden” characterization sometimes applied to precolonial settings, particularly in reference to California (see Denevan 1992; Preston 1996, 1997). Such endemic diseases and potentially fatal maladies include tuberculosis, hepatitis, fungal infections, gastrointestinal parasites, congenital abnormalities, and treponemal diseases such as syphilis and yaws, as well as other ailments sometimes exacerbated by seasonal malnutrition or traumatic injury (Ubelaker 2000). Archaeological data also indicate that late-precontact cultural changes sometimes attributed to European disease actually predate the potential introduction of nonnative pathogens, so epidemics are neither represented by nor implicated in apparent social upheaval in these areas (e.g., Brose 2001; Fitzgerald 2001; Snow 2001). Other archaeologists note that the timing of depopulation, if evident, varied greatly. Also, this observation is inconsistent with a more uniform spread of introduced disease across the landscape necessary to support the catastrophic view of widespread demographic consequences. Finally, epidemiological data indicate that differential native settlement aggregation or dispersal could significantly affect the spread of disease, even in virgin soil conditions (see Cook and Lovell 1991; Erlandson and Bartoy 1995:156; Johnson and Lehmann 1996; Milner et al. 2001; Snow and Lanphear 1988). For example, patho-

gens would be more likely to spread through the dense populations of chiefdoms than between small, mobile bands of hunter-gatherers (but see Thornton 2000:18; Ramenofsky 1990:41). Researchers argue that such differences would have effectively halted the early, widespread dispersal of Old World diseases throughout North America prior to direct transmittal by colonists. Together, these data suggest that native demographic change due to introduced European disease during the colonial era—and the consequent culture change—might not have been as severe and unidirectional as implied by Dobyns. Instead, scholars opposed to the catastrophic view of depopulation significantly preceding face-to-face encounters contend that other factors resulting from nonnative presence or pressure, such as intergroup aggression or starvation, contributed to native population decline during this time (see Alchon 2003; Cook 1976; Hickerson 1997; Ramenofsky 1987).

THREE SCENARIOS OF DEPOPULATION

Thus, three alternate scenarios regarding the timing, magnitude, and cultural consequences of native depopulation during the colonial era emerge from a review of existing archaeological, ethnohistoric, and epidemiological literature. The first scenario—based largely on ethnohistoric and epidemiological data—is that colonial-era population collapse was early, unique, and devastating (Dobyns 1983). Depopulation preceded direct contact with nonnative people in many areas, and population declines were both severe and sustained. Significant cultural changes would have been the inevitable consequence of such population collapse, including language extinctions, loss of traditional knowledge, changes in material culture, shifts in ritual as elder cohorts were lost to European disease, collapse of complex social structure, and changes in settlement patterns, at a very early time in colonial settings (Dobyns 1983, 1991; Dunnell 1991; Ramenofsky 1987, 1991; Smith 1987). Even if groups had been previously exposed to fatal diseases endemic to North America, scholars contend that these pathogens created no demographic crises comparable to that experienced at contact with nonnative diseases. In addition, the repeated exposure to different Old World pathogens, or second waves of the same disease after immune individuals were no longer present in the population, kept groups from rebounding to any significant extent.

A second view—uncommon in the archaeological literature but suggested by demographic simulations and some ethnohistoric accounts—

also holds that colonial-era population decline due to nonnative disease was indeed catastrophic and likely preceded face-to-face contact. But this event was not necessarily unique nor did it inevitably result in significant culture change due to depopulation alone. Over the long term, various large- or small-scale oscillations in population size, growth rates, or other demographic characteristics probably occurred within native communities. Colonial-era depopulation was only one, and not necessarily the most significant, of such shifts. Due to likely histories of population fluctuation in small-scale societies in particular, hunter-gatherers and perhaps even some horticultural peoples would have had adaptable cultural systems that could weather short-term changes and manifest long-term cultural continuity in the wake of colonial-era depopulation (Rubertone 2000:435). Native communities may also have had enough time to rebound from significant population loss from introduced disease (if not suffering subsequent epidemics of different pathogens), thereby allowing reestablishment of groups at predisease size (Thornton 2000:19; Thornton et al. 1991; see also Galloway 1994). This process may have been facilitated, in part, by the incorporation of survivors from neighboring groups (e.g., Bradley 2001; Snow 2001).

The third scenario—inspired primarily by extant archaeological data from selected regions—suggests that contact-era demographic collapse from introduced disease was neither that significant nor that early (e.g., Baker and Kealhofer 1996; Snow 1995, 2001; Thornton 2000). As a result, any apparent culture change during the colonial era was not due to demographic change alone nor was it the most significant factor. Instead, proponents contend that significant depopulation among native groups occurred later in time and resulted from a host of factors, including deliberate genocide of native people and potential escalated warfare between Indian groups under conditions of contact stress (Cook 1976; Jackson and Castillo 1995; Phillips et al. 1951). Colonial-era culture change simply reflects greater interaction with nonnative people rather than response to disease-induced depopulation.

Although defining distinct processes and outcomes of European colonialism for native people, this tripartite categorization should not be taken to imply that only one of these views applies to North America as a whole or even to a particular region to the exclusion of other scenarios. Instead, the data amassed thus far make it clear that different scenarios probably apply to different areas—or even to the same native group—during the colonial period. Such coincident or serial transformations are especially true with respect to the second scenario, since

what it describes entailed no long-term demographic or cultural consequences. Where this process occurred, there might not be any subsequent demographic and cultural shifts, or later population decline and culture change may have resulted from other causes consistent with the third scenario. The process of colonial-era depopulation and repopulation would be evident during a brief interval of a few generations and thus might be difficult to recognize in archaeological data and be unrecorded in native oral history.

Each scenario has important implications for anthropological and historical understanding of intentional versus unintentional consequences of colonial encounters for native experience, response, and survival in North America. In fact, if devastating Old World disease significantly preceded direct interaction and involvement of Indians with nonnative people and enterprises during the colonial era as suggested in the first two scenarios, the very notion of “colonialism” in such circumstances may be called into question or may require a broader definition than that generally implied by use of this term (cf. Gosden 2004; Silliman 2005; Stein 2005; see also Alexander 1998). From an anthropological perspective, such demographic change prior to face-to-face encounters may not differ markedly from other cases of population decline in the precolonial world—for example, loss of life due to natural disaster. And coincident culture change may not be distinguishable as a “colonial” process from dynamics set off by incursion of Indian people into a new region in the precolonial past, regardless of their intent with respect to the resident population. Is “colonialism” a proper representation of similar processes simply because they occurred during the colonial era and were initiated—albeit sometimes at significant distance—by a European presence? Can later engagements between colonists and native people in more traditional colonial settings such as missions, ranchos, and trading posts be understood without first understanding these early seeds of the colonial process? Analysis of the effect of colonial encounters on Native Americans, particularly in the short term, is hampered by the potential inability to disentangle depopulation due to introduced disease from the physical incursion of nonnative people so that the consequences of each can be separately understood. It is often difficult to determine whether the “colonizers” at a given time were European people, their ideas and goods, or simply their pathogens. As noted by Gosden (2004:123), however, the precedence of infectious disease in many colonial encounters in the Americas, Australia, and the Pacific Islands effectively *permitted*

colonialism as we generally conceive of it today—that is, the taking of territory perceived as *terra nullius* (empty land) by European invaders.

ESTABLISHING EVIDENCE FOR COLONIAL-ERA DEPOPULATION

Determining which of the three scenarios of colonial-era depopulation and culture change applies to a particular native group—and thus disentangling the two major forces of European colonialism in the New World—relies on native oral history, historical accounts, or archaeological investigations. In many regions, however, these records have thus far proven equivocal about whether introduced disease preceded direct interaction between native and nonnative people or if the dual colonial enemies arrived in tandem to claim their victims and their spoils. This ambiguity exists, in part, because precontact and colonial-era demographic trends are rarely well defined (Dean et al. 1994; Ramenofsky 1987; see also Petersen 1975; Plog and Hantman 1990; Schacht 1981). For example, historical records often do not provide quantitative data on native population size before and after encounters, and studies in various areas have demonstrated the difficulty of establishing demographic profiles—even for the historic era—with archaeological data (e.g., Perttula 1991; Ramenofsky 1987; Walker et al. 1989).

The archaeological difficulties are partly a function of temporal control (see Milner et al. 2001), because focus on specific decades within the colonial period calls for very fine-grained chronologies. This generally precludes the use of techniques such as radiocarbon dating that have inherent statistical error ranges (cf. Campbell 1990; Green 1993). Instead, colonial-era chronologies for Indian sites often rely on the qualitative or quantitative incorporation of European goods into native material culture, with these observations sometimes augmented by additional traits such as local native ceramics (e.g., Arkush 1995; Brose et al. 2001; Ramenofsky 1987; Smith 1987; Snow 1996). The frequency and diversity of nonnative items—including glass, copper, and brass beads, other metal ornaments, and various metal tools—are generally assumed to increase through time. But different archaeological data-collection strategies, variation in site function and duration of occupation, material preferences, differential native access to goods within or between groups due to social or geographic factors, or the presence of heirlooms could significantly distort interpretations based on these methods. In

addition, this approach may be tautological if data are subsequently applied to the issue of consequent culture change. Using these methods, examination of population size is limited to the immediate contact era, with population estimates spanning at most two to three centuries (e.g., Ramenofsky 1987). Such short-term population profiles preclude the possibility of recognizing whether colonial-era decline was simply a function of stochastic fluctuation common to some human populations over the long term or whether decline was related to colonial encounters (cf. Kulisheck 2005).

There are also difficulties resulting from sampling biases. Archaeological estimates of colonial-era population size have traditionally relied on existing settlement information, but these data were often not originally collected for demographic purposes. For example, the sample may tend to overrepresent late sites, larger deposits, locales with architecture or other more visible elements, or sites in certain regions subject to more intensive archaeological reconnaissance. Since site frequency or habitation space are often used as proxies for population size, estimates of the number of individuals for a given region may be statistically indefensible if drawn from samples that are neither spatially nor temporally representative. Demographic results are often ambiguous and interpretations may be subject to wide latitude based on the proclivities of the investigator (cf. Ramenofsky 1987; Snow 1995, 2001; see also Galloway 1994; Henige 1998). In the absence of reliable demographic data, catastrophic depopulation is sometimes simply assumed to have taken place during the colonial era when early, significant culture change is evident in the archaeological record (Perttula 1992; Smith 1987). Presumed cultural consequences of depopulation are analyzed without developing direct evidence for population collapse.

Only rarely have archaeological and ethnohistoric evidence for both colonial-era demographic and cultural changes been developed together in a systematic or quantitative fashion. Nor have such characteristics of Indian groups generally been examined over a longer time span to allow examination of colonial-era native experiences within the broader context of long-term group history (cf. Brose et al. 2001; Palkovich 1996). Thus, it is often unclear how dramatic the population loss was, what the timing of population decline and subsequent culture change were, what constituted short- or long-term change in various situations, and whether such impacts occurred within communities previously exhibiting long-term continuity and population stability (see Baker and

Kealhofer [eds.] 1996; Verano and Ubelaker 1992). In other words, was colonial-era population decline and consequent culture change relatively unique and traumatic, or was it part of a preexisting pattern of change and accommodation that developed over hundreds or thousands of years? These questions probe at the very heart of when and whether—or which aspects of—colonial encounters were significant to the culture history of a particular native group.

In the absence of rigorous and complementary analyses, arguments regarding the timing and magnitude of depopulation based on archaeological data—particularly prior to face-to-face contact and historical recording—are frequently speculative. Such studies also often reach disparate conclusions for various areas. This suggests either that data or methods are insufficient or that significantly different processes were occurring in different regions and among different groups. With such ambiguous historical or archaeological records and associated methodological challenges, it is difficult to assess the specific relationship between demographic impacts, on the one hand, and culture change, on the other. It is impossible to know how the process of colonial encounters unfolded, including sequence and timing. What factors pertained to specific areas? Why were certain native groups able to persist? Would the progress or outcome of the encounter have been different in the short term or the long term given a different scenario?

The stories that emerge from this era—partially rendered through archaeology, native oral history, and historical documents—suggest a complicated mosaic response to colonial challenges and equally diverse outcomes. Such different processes and results seem reasonable, given the diversity of Indian groups, colonizers, and intentional and unintentional factors contributing to encounters (see also Stein [ed.] 2005). But a more detailed, contextual analysis is necessary to bring texture, meaning, and understanding to the native experience in any given area and to provide a perspective that is missing from written records. Only in rare cases did native people, culture, identity, and homeland remain relatively intact. Instead, the power of the dual forces of colonialism initially undermined one or more of these qualities, altering native life swiftly, dramatically, and often irrevocably. In such circumstances, facing the subsequent onslaught of nonnative people onto native lands was overwhelming and, often, the final blow to traditional life.

COLONIAL ENCOUNTERS IN CALIFORNIA

Whether gauged by the spread of nonnative disease or physical incursion of colonists, historical records indicate that California was one of the last regions of North America touched by European colonialism. Still, the processes that played out between colonists and native people in this region were similar to those that had unfolded in portions of the East, Midwest, and Southwest during the previous two centuries. Initial contact between a few native and nonnative people in California likely occurred in the mid-to-late 1500s (Costello and Hornbeck 1989; Engstrand 1997; Erlandson and Bartoy 1995), but sustained nonnative influence and colonization did not begin until the mid-1700s. From that time forward, the history of native and nonnative interaction proceeded from an initial environment of coexistence to ultimate near exclusion of Indian peoples after the annexation of California by the United States in 1846 and the initiation of the Gold Rush in 1848.

In this region of the Far West, colonialism came in two primary forms. Spanish missions were widely scattered on the Central and Southern California coastal plain and adjoining oak-covered ranges, and the Russian mercantile operation at Colony Ross was located just 75 kilometers northwest of the northernmost mission on the fog-drenched, forested coast of what is now Sonoma County (see map 1). At Fort Ross, a multiethnic community of Russian, Creole (individuals of both Russian and native descent), native Alaskan, and Kashaya Pomo people was established to undertake and support the procurement of pelts from fur-bearing marine mammals for overseas trade. Native Alaskan men were employed as hunters, using their traditional boats and weapons. Russians and Creoles served as administrators who oversaw hunting and other commercial and agrarian activities necessary to support this enterprise. Both Pomo and neighboring Miwok men and women from nearby Indian villages were employed as laborers, particularly on a seasonal basis. Finally, local Kashaya women often married native Alaskan men who settled at the fort, founding households in the native neighborhood adjacent to the stockade. Established in 1812 and maintained until 1841, this Russian colonial operation eventually grew to include three ranches, one port, and an outlying island hunting station in addition to the original administrative center (Lightfoot 2005).⁹



MAP 1. Russian and Spanish colonial interests in California circa 1815 in relation to Yosemite Valley (after Lightfoot 2005: map 2).

The twenty-one Spanish missions—four with associated military presidios and several others with nearby small, secular pueblos—were located from San Diego de Alcalá in the south to San Francisco Solano at Sonoma in the north. The latter was the final mission in the system of outposts that were constructed between 1769 and 1823. Native people from multiple local groups were brought to the missions—often by force—to receive religious indoctrination, to labor in the fields, and to serve in the workshops to produce food and goods required for the community. This life contrasted dramatically with their traditional beliefs and practices as hunters, gatherers, and fisherfolk living in relatively small communities. Yuman- and Takic-speaking peoples comprised the native populations of the San Diego Presidio District; the missions within the Santa Barbara Presidio District primarily encompassed Chumash people; Salinan, Esselen, and speakers of southern Costanoan languages constituted the original native population for the missions of the Monterey Presidio District; and the missions within the San Francisco Presidio District initially drew on the additional local Costanoan and Miwok speakers around the San Francisco Bay.

The religious intent of this colonial enterprise provided an initial experience in direct contact between natives and Ibero-Americans on the West Coast similar to that of the Spanish borderlands in Florida, Texas, New Mexico, and Arizona. Since the goal of the missionaries was not to destroy or displace native peoples, assimilation was at the forefront of colonial interaction at that time. Non-Indian mission populations were very small, and exploitation of native labor was critical to the development and maintenance of the missions (Hurtado 1988; Milliken 1995; Silliman 2001). Even after Mexican independence from Spain in 1821 and secularization of the missions in 1834, native populations were significantly larger than those of nonnative people in Alta California, and the economic reliance on native labor initiated during the Spanish colonial period persisted (Silliman 2004). This is not to say that the consequences of missionization or later secularization were not severe for native peoples (see Cook 1976; Jackson and Castillo 1995) but rather were similar to the Russian colonial objectives at Colony Ross—the intent was not destruction or annihilation of the Indians. Still, the missions were centers for the introduction and spread of European diseases among the native population, and loss of life from epidemics within the Spanish mission system is well documented (Walker and Johnson 1992, 2003; Milliken 1995).

Given the geography of Spanish and Russian infiltration, local manifestations of contact and colonialism during this period varied greatly throughout California, both in timing and impact on native peoples. Coastal groups from San Diego to Sonoma experienced mission life directly, albeit sequentially over the sixty-five-year period from mission development to secularization. Adjacent inland groups likely had delayed direct interaction or simply took advantage of opportunities created by the Spanish or Russians at a distance (see Phillips 1993). In the Sierra Nevada and far Northern California, however, there was no direct contact with either the Spanish (and later Mexican) or Russian colonists during the colonial period. Still, native oral tradition and archaeological evidence indicate that the colonial drama of native California during this time was not limited to the missions, coast, or even a larger area also encompassing adjoining inland valleys. Despite the relative isolation of native people in the interior from initial non-native incursion into California, the force and momentum of colonial activity on the coast ultimately led to developments farther inland that served to initiate a new chapter in the cultural history of these native groups.

Historical records and anthropological data indicate that Indian people throughout much of California felt the weight of the Spanish occupation in particular, whether they had direct interaction with these intruders or not. By their very presence, the Spanish changed the cultural landscape of the region, creating challenges and opportunities not only for Indian people brought to the missions but also for native people beyond the immediate reach of the religious and associated military operations (see also Milner et al. 2001:16). In the interior valleys, foothills, and mountains, traditional trading partners were lost as families were removed to the missions or people perished from epidemic disease. These same dislocations or fatal encounters provided access to new territory and resources by those households or communities that remained. Groups as yet untouched negotiated or clashed with those closer to the expanding grasp of the Spanish who sought refuge in more distant tracts of land to the east. Escape of mission neophytes was also common, and many individuals fled to the temporary safety of marshlands in the Central Valley or strongholds in the Sierra Nevada, where they sought to avoid recapture (Castillo 1989; Hurtado 1988:32; Milliken 1995; Phillips 1993). Unfortunately, such flight likely led to the spread of nonnative diseases to these distant places and peoples.

UNDERSTANDING INDIGENOUS COLONIAL EXPERIENCES:
THE YOSEMITE INDIAN STORY

Living a traditional life within their ancestral homeland in the central Sierra Nevada, the Indian people of Yosemite Valley were one such group that faced the dual assaults of colonialism after the establishment of European enterprises and, finally, the invasion of nonnative people into their traditional territory during the Gold Rush. The distance of Yosemite Indians from the closest Spanish outposts situated around San Francisco Bay—more than 250 kilometers to the west—was not enough to keep them safe from deadly disease that originated in these or other Spanish colonial communities and spread inland via native people. Yosemite Indian oral tradition indicates that their population declined significantly and abruptly after the introduction of a fatal disease, forcing survivors to make choices that would decide their fate as a people. And their remote valley—although a potent ally in their fight against a militia intent on removing them from the Sierra Nevada in the early 1850s—ultimately proved an insufficient defense against those determined to take their land, consume their game, and extract gold from the streambeds of the adjacent foothills. But Yosemite Indian history and culture also show that these people had remembered and internalized the lessons of hardship and survival of past generations, dating back to a time before Spanish, Russian, and American penetration into California. Thus, despite setbacks and tragedy resulting from the dual assaults of colonial encounters, this memory helped contribute to the maintenance of traditional life, culture, and identity in their territory well after nonnative people were also occupying this land.

The story of Yosemite Indian population collapse due to the introduction of European disease during the colonial era, yet their subsequent cultural endurance, provides a compelling picture of people who survived in the face of enormous difficulties and swiftly changing circumstances. The details, characters, and timing are specific to Yosemite, but this story of introduced disease at the forefront of colonial encounters is not unique. The process documented by Yosemite Indian oral tradition and regional archaeology is consistent with that posited in the second scenario of colonial-era depopulation—early, severe population decline preceding face-to-face encounters with colonists but no consequent cultural disintegration. The fact that nonnative disease evidently spread to and through small hunter-gatherer populations in California is especially interesting, as this pattern is not predicted based on epidemiology.

Instead, epidemiological data suggest that large, sedentary populations are more vulnerable to infectious pathogens such as those known to have been introduced into the Americas from the Old World.

In light of these factors, this presents an excellent case for analyzing the dual threats of colonial encounters separately and understanding what these processes might look like in other regions of North America that lack such unambiguous historical and, perhaps, archaeological records. This scenario of discrete colonial-era assaults is particularly challenging from an interpretive standpoint, however, exactly because the anticipated impacts of “colonialism” may be invisible in the archaeological record for all but the briefest time. By definition, populations partially or completely rebounded and culture may not have changed irrevocably. Thus, it is important to consider archaeological evidence of the process unfolding and, perhaps, reversing. This also allows us to critically assess which is most plausible: the catastrophic view of disease-induced demographic and cultural change posited for widespread areas of North America, or the contrary perspective of no significant demographic and cultural impacts in the early colonial era.

The colonial era was clearly a time of turmoil and change for native people in North America—perhaps more so than at any other time in the history of most of the groups affected. Certainly, some had previously faced fatal disease, natural disasters, or other challenges to their way of life, including hostility and aggression from neighboring groups. But the invasion of traditional territories by European interlopers or their lethal biological agents—or both—was a widespread phenomenon that ultimately extended across the entire continent and changed the course of history and the daily life of native people throughout North America. Many Indian people were forced to relocate, while others aggregated into communities with neighboring groups or altered their social organization to cope with change and remain in their homeland (see Brose et al. 2001). At the same time, however, some groups were able to maintain their culture, identity, and traditional residence against incredible odds despite short-term changes necessary for their survival—first, perhaps, in the face of catastrophic depopulation and later after direct incursion of nonnative people. Anthropological analysis of these disparate outcomes of colonial encounters entails seeking answers to two key questions: What role did introduced disease play in the initial colonial experience of native groups in North America? And what practices or circumstances allowed some native cultures to endure throughout this period and prevail in the maintenance of their identity

and customs, while others did not? In other words, why did groups such as the Yosemite Indians survive to tell the tale?

In initially considering these questions, it is tempting to reduce such an analysis to anthropological generalities—to make claims, for example, that resilience is rooted in broad economic distinctions such as the inherent cultural and geographic flexibility of residentially mobile hunter-gatherers versus sedentary horticultural people. Or to pose an anthropological argument centering on the social complexity of the native group involved and, thus, on the potential vulnerability of chiefdoms or states to collapse given the hierarchy of such society and the specialization in roles that allowed these systems to function. In contrast, bands or tribes might remain relatively unscathed. Or we might look for answers in the dichotomy between the colonizer and colonized, focusing on the power of the participants. Such disparities include the superior weapons technology of the foreigners; the support of a larger economic system, complex political structure, and substantial population beyond the shores of North America; and the debilitating effects of epidemic diseases that preceded or accompanied encounters. But review of the cases for which there is sufficient archaeological and archival documentation suggests that an understanding of cultural survival or decline cannot be found by limiting discussion to such simplistic or generalizing dichotomies.

An alternate approach might be to highlight the historical rather than anthropological aspects of the encounter. Instead of considering groups cast as stereotypes or archetypes of social and cultural forms, the focus would be on individuals and the particular context in which the events unfolded. Such an analysis would consider the specific antagonists involved—the central figures, both native and nonnative, who were jockeying for power or serving their personal or group interests in interaction with the other. Specific native leaders or priests might be significant in guiding survivors back from the brink of collapse brought on by disease-induced depopulation or dislocation from traditional territories and resources. This analytical approach would be facilitated by access to ethnohistoric accounts and native oral history instead of emphasizing or relying on archaeological data. Or we might look to the specific history of the people and groups involved, placing the event of depopulation or the process of colonial encounters more generally in longer-term perspective of action and experience. Such analysis would include assessment of existing conditions of population health as well as the previous experience of native communities with demographic

crises. This approach—suited to archaeological study with or without complementary archival sources—fosters an assessment of past knowledge and an appreciation for lessons learned. Such study provides context for understanding decisions made by individuals during this time of swiftly changing conditions.

In fact, the Yosemite Indian experience suggests that the answer to the question of cultural persistence or change through the colonial era may lie in both culture and history—in the convergence of circumstance, the specific personalities involved, and the traditional beliefs, practices, and embodiment of knowledge in daily life that provided for native cultural survival up to that time (see Stein 2005). The outcome of specific colonial encounters was the result of choices made by those who participated or survived, exercised within the context of both their own personal experience and the experiences of their ancestors that were preserved in oral tradition. Yosemite Indians, as native people elsewhere in North America, were individuals making decisions in the most trying of circumstances. These decisions would affect them as individuals and as a group in the short term or the long run, or both. But the choices they made and the options they perceived were those dictated by both culture and history.

With culture and history so irrevocably intertwined in creating the experience and defining the outcome of colonial-era encounters, anthropological analysis must bring together both of these elements to understand the significance of introduced disease or violence, or both, to the process of colonialism. The essential bond of meaning, practice, people, place, and circumstance require an “event-centered” approach to study—a historical anthropology that acknowledges momentaneous cause but views cultural consequences as the intersection of long-term structure (i.e., culture) and short-term event (i.e., history) (e.g., Ohnuki-Tierney 1990:10; Sahlins 1981). Such methodological commission represents an intellectual move away from the distant roots of anthropology born in era in which “history” was decisively placed within the domain of literate societies and all others were consigned to a timeless “prehistory” (Conn 2004), an imagined past before engagement with Europeans that lacked change, transformative events, and individual agency (Ohnuki-Tierney 1990:3). In contrast, contemporary historical anthropology acknowledges that culture is constantly changing, or has the capacity to change at any time, due to both internal and external factors. Therefore, anthropologists are observers and recorders of serial manifestations of culture in a dynamic world (Biersack 1991),

much like other witnesses to contemporary and past human action. The historical anthropological charge, however, is not to simply report *what* happened but rather to examine the *how* and *why* of any event and its cultural consequences for the people involved (Ohnuki-Tierney 1990:6–7). In addition, such assessment must consider whether evident change in the short term represents a deep structural shift or simply surficial change in practice but enduring understanding of meaning (Ohnuki-Tierney 1990:7). To facilitate this analytical task, short-term events must be placed in long-term context (Biersack 1991).

The methodological demands and interpretive goals of historical anthropology are met by drawing on multiple sources of data that encompass both of these temporal scales (Washburn and Trigger 1996: 62). Encompassing native oral history and material culture accessible through archaeology, as well as nonnative historical narratives and ethnographic accounts that include both written documents and visual images, analysis treats each as a different “historical” record of the conditions and practices of both the observer and the observed.¹⁰ Since every record brings a unique voice and perspective, each also generates specific challenges and opportunities for a holistic analysis of phenomena, process, and outcome. Analysis requires the critical appraisal of the particular contribution of each record, including understanding the context of production (which, in archaeology, encompasses both the formation of the archaeological record itself by cultural and natural processes [Schiffer 1976] as well as the archaeological interpretation of this material record), the goals and proclivities of the author or voice, and the intended audience (Biersack 1991:20; Galloway 1991, 2006; Ohnuki-Tierney 1990:4). These facets reveal the inherent strengths and prospective weaknesses of each record, including the types of biases common to each type of informant and the data on which they may rely. Woven together, these diverse sources and the different perspectives offered by each create a single picture—in this case, a view of the timing, magnitude, and cultural consequences of colonial-era disease-induced depopulation.

With the mandate and methods of historical anthropology as a guide, the first step in analysis of the Yosemite Indian experience is study of what is already known, or can be further gleaned, from sources regarding the introduction of nonnative disease and subsequent depopulation. That is, we must define what we know of the “event.” Critical examination of existing sources is also fundamental in the second step, which entails exhaustive compilation of all existing data on native life prior to

and following the infiltration of nonnative fatal disease into the central Sierra Nevada. That is, we must define “structure” both prior to and after the event. Although detailed in terms of the number of sources and use of such source material, analysis in both of these steps serves primarily as an outline, a starting point of what we know of the event and native culture at the time and, perhaps, an initial index to changes that might be attributable to the catastrophic depopulation. It is only after these first two steps have been completed that we can move on to a closer examination of the timing, magnitude, and cultural consequences through further archaeological study. Such additional analysis fills in critical and substantive detail on each of these three elements of colonial-era depopulation as only archaeology can.

For this final step as well as the two preceding, the research strategy assumes no continuity in either cultural identity or practice but rather recognizes that these are two among many issues that must be critically assessed in review of the documentary, oral, and artifactual records. Thus, this undertaking contrasts with other anthropological and archaeological approaches to colonial-era culture change such as acculturation studies and the direct historical approach (Cusick 1998b). In the latter case, the intent was to trace the cultural evolution of a specific ethnic group back in time by starting with study of village sites attributable to the group based on historical records. Archaeologists assumed ethnic continuity and sought to document the broad scope of material change from the distant past until initial contact with European colonists (Ramenofsky 1990). Acculturation studies, on the other hand, traced cultural change forward since initial contact, assuming discontinuity, but analysis was often limited to identifying the incorporation of new, or the loss of old, material traditions (Cusick 1998a). Neither of these approaches drew on multiple sources in a critical way, problematized the process of colonialism itself, considered the how and why of cultural change during the colonial era with an eye to native agency and event, or brought together both the short term and long term in analysis and explanation.

MEMORY IN WORDS AND OBJECTS

The story of the timing, magnitude, and cultural consequences of colonial-era catastrophic depopulation among the Indian people of Yosemite Valley is chronicled in this book by bringing together native oral tradition, ethnohistoric accounts, historical images on film or canvas, later

ethnographic data, and archaeological information that extends well beyond the span of the colonial era. This approach is not unique. Many scholars have recognized the value of working between documents and the archaeological record in assessment of colonial encounters (e.g., Deagan and Scardaville 1985; Galloway 2006; Heizer 1941; Kirch and Green 2001; Lightfoot 1995:199, 2005; Silliman 2005; Voss 2002) and incorporating native oral tradition into long-term archaeological analysis (Anyon et al. 1996; Echo-Hawk 2000; Mason 2000, 2006; Vansina 1985). This strategy inherently promotes a change in temporal focus, as one moves from the event of depopulation and possible culture change in the colonial era to the broader multigenerational view of demography and culture. Likewise, such a perspective encompasses changes in spatial scale, moving from the single occupational episode or community to the region and beyond. This “multiscalar” approach (e.g., Lightfoot 1995; Tringham 1991; see also Palkovich 1996) establishes the essential long-term demographic perspective on native population decline and allows both demographic and cultural change to be considered together.

Before we can undertake this venture, however, it is first necessary to consider the various voices that contribute to this endeavor. Chapter 2 introduces the leaders, miners, journalists, innkeepers, artists, naturalists, and anthropologists who produced the records upon which much of this study relies. The potential biases of each type of record are considered—and, in some cases, the biases and background of a particular witness are analyzed—while this discussion also explores the context of production that may have influenced how native people and culture were perceived. Such analysis applies to oral and documentary, as well as archaeological, sources and reveals the strengths and weaknesses that must be taken into account in using such records.

With this critical examination of sources in place, this journey in historical anthropology begins in chapter 3 with history. The chapter details the sequence of events leading up to the ultimate incursion of nonnative people into Yosemite Valley; the actions of Chief Tenaya, Maj. James Savage, and other Indian and non-Indian people in this region at that time; and the story of colonial-era native population collapse and cultural response occurring more than a half a century earlier. This poignant history is revealed first through accounts from the Gold Rush era, when Yosemite Indians were living in a world of growing violence and desperation. Encounters between Indians and miners were common, and both parties were increasingly agitated by the presence of the other. But as we will see, this was the second, rather than the

first, colonial assault on the native people of the region. Native oral tradition speaks of the earlier time—not many decades prior to contact with nonnative people—and provides our first glimpse of depopulation and whispers of the voices of Yosemite Indian ancestors. These recollections are brief but also infused with emotion, humanity, and resilience. Family genealogy, dendrochronology, and additional historical evidence both support and augment this tale. Particularly important, these data establish the timing of population decline—the first critical issue that must be addressed—while also providing a key clue regarding the magnitude of depopulation. This chronicle also sets the stage for subsequent analysis, placing Yosemite Indian experience in the theater of colonial California and later developments and identifying recurrent themes in Yosemite Indian actions during colonial encounters that have deep roots in native history.

Next, a blending of historical and anthropological voices provides a review of Yosemite Indian culture during the millennia before and the few decades after the introduction of nonnative disease. Based on extant records, chapter 4 provides the broad panorama of life prior to the infiltration of deadly pathogens as well as a more detailed scene of daily life afterward. This picture of native life at and after contact with nonnative disease begins with a view of the more distant past as revealed through archaeology. These data depict major long-term patterns of Indian subsistence, settlement, technology, and exchange spanning more than five thousand years, and native oral tradition hints at specific events within this span. In contrast, much of what we know about the everyday practices and worldview of these people in the wake of disease has heretofore been derived from historical accounts, including observations by miners, innkeepers, and travelers. Some of these men and women came to know the Indian people and their customs intimately through the life they shared together away from the formalities—and, sometimes, the prejudices—of city life. Later, anthropologists and other academics recorded what they learned of traditional ways from Yosemite Indians and related groups of the adjoining foothills through interviews and observation. Together, these ethnohistoric, ethnographic, and archaeological observations provide a picture of daily life that contributes to further archaeological examination of cultural change or continuity that resulted from colonial encounters. These records also reveal practices significant to cultural survival.

The faces and personalities of history fade as we prepare to consider the archaeological evidence for colonial-era depopulation in Yosemite.

In response to the evident shortcomings of much previous archaeological research on the topic of disease-induced native demographic and cultural change, chapter 5 details how the analysis of Yosemite Indian colonial-era cultural history was structured from the outset as a demographic study. Data were gathered with the specific aim of deriving a view of changes in population size in both the colonial era and precontact times, with temporal resolution commensurate to the task at hand. More general discussion also considers mechanisms of demographic change such as migration, fertility, and mortality that might be revealed by archaeological data and contrasts the methods of demographic archaeology and historical demography for examination of such demographic phenomena in the colonial era.

The methods of science rather than the voices of the participants continue the Yosemite Indian story in a quantitative rather than qualitative fashion in chapter 6. This element is not a timeless history, but is fixed to a particular place and time, firmly anchored to the experience of a few generations of Indian people and their immediate descendants. Information on relative population size and other demographic parameters provide a picture of the consequences of introduced infectious disease, the cultural milieu of decision making by individuals under these circumstances, and the demographic mechanisms potentially contributing to evident population rebound. These data reveal a deeper history of demographic change that is also recorded in native oral tradition and may provide clues to the choices made by Yosemite Indians during the colonial era in the face of depopulation.

In chapter 7, historical records, native oral history, and previous archaeological studies from throughout North America serve to outline the range of possible cultural consequences for native people in the aftermath of disease-induced population collapse. As this discussion reveals, this experience could have touched native lives in many ways and at scales ranging from the individual to community. The assault of the unknown enemy also disrupted the practices of people and the networks of relationships both local and distant. Some consequences may have resulted from decisions made by survivors, although such agency was often exercised in an environment of few options. Other outcomes are simply accidental—the result of stochastic processes that reflect fate and circumstance rather than choice and action. Thus, these data highlight the diverse venues for archaeological inquiry into the cultural consequences of catastrophic depopulation.

This canvass of the broad contours of population-related cultural

consequences is used in chapter 8 to assess evidence for consequent Yosemite Indian culture change or continuity revealed by archaeological data. In this case, it is the daily practices of the people evident at pre- and postdisease occupation sites that are of interest. This assessment avoids a focus on the incorporation of nonnative goods, which has been a common element in many previous studies of colonial encounters in California (e.g., Arkush 1995; Bamforth 1993; Costello 1989; Deetz 1963; Farnsworth 1989, 1992). Rather, the context of use and meaning of objects of both native and nonnative manufacture are considered through a spatial and material approach. Such a strategy is especially suited to an area where nonnative items were either not present or were rare, even well after the Spanish colonial presence in California. Cultural change is viewed from the scale of household to the village and region, with site-specific archaeological data expressly collected with this research goal in mind. Ethnographic and ethnohistoric observations complement this analysis and begin to bring history back into the foreground of this historical anthropology once again.

With the Yosemite Indian story of introduced disease, depopulation, and cultural persistence thus established, the focus shifts in chapter 9 to compare this history with that of other native people elsewhere in North America. With the three alternate scenarios of the timing, magnitude, and cultural consequences of depopulation in mind, ten studies representing a broad geographic cross-section of North America are considered. In other areas, the circumstances were quite different than in Yosemite Valley, as native groups were organized differently, had other customs, or lived in a very different environment. In addition, these other peoples had their own distinct histories, and they also experienced colonial encounters differently either because of the colonizer's intent or because the timing and types of introduced disease were different. What happened elsewhere? What light does the Yosemite Indian example of early depopulation—but cultural persistence—shed on patterns evident in archaeological data from other areas? What anthropological or historical similarities and differences can be drawn between various cases? Several previous archaeological studies have considered the apparent cultural consequences of colonial encounters in California and elsewhere, but the specific role of population collapse to such changes has rarely been assessed.

This journey concludes in chapter 10 with a return to the larger debate on the timing, magnitude, and cultural consequences of colonial-era native depopulation and an assessment of the dual assaults of

European colonialism in regional and continental perspective. Did widespread pandemics precede face-to-face encounters and irreparably alter indigenous lifeways prior to European contact? Or is it possible that precontact Old World disease infiltrated other areas, but populations either recovered or demographic decline alone did not result in significant culture change? What generalizations, if any, can be made about native experience, choice, and outcome in colonial encounters in North America? It has been argued that infectious disease was the most potent weapon in the arsenal of European colonialism, even though this assault may have preceded colonists' physical presence and served their aims without ever being intentionally deployed (but see Stearn and Stearn 1945). The devastation of introduced disease and creation of a "widowed landscape" (Dobyns 1983; Jennings 1976) left large tracts of land "empty" for settlement and exploitation or, at least, reduced and weakened native populations enough to permit colonial expansion and domination in a relatively short time (see Gosden 2004). But the Yosemite Indian case suggests that epidemic disease on its own—although devastating—was not sufficient to lead to the permanent abandonment of regions and collapse of many native societies in North America. Given distance from invaders and time to recover from the demographic shock through short-term changes that facilitated their survival, Yosemite Indians were able to rebuild their traditional lives with continuity in tradition, story, and song. This also appears to be the case for some other groups in North America. Such communities were not the same people in some ways—as indicated by the emergence of Yosemite Indians in both name and action after the impact of introduced disease—nor would we expect them to be after the trauma of death and the struggle for survival in the face of continued assaults. But their story indicates that the culture and history of any native group during the colonial era was intimately linked to the vision and resilience of individuals who survived and to their commitment to the way of life they had previously known.