Confronting a Material New World

As the sixteenth century gave way to the seventeenth, rumors yielded to firsthand experience. When permanent colonies of newcomers began to dot the Atlantic coast and the banks of rivers flowing from the interior, their actions intensely affected local Native communities. But for most of Indian country, the still-distant Europeans' conscious activities were less significant than the powerful material forces that their arrival unleashed. Wherever Europeans settled, intercultural commerce flourished, and even in areas far from colonial centers, expanded trade not only reordered Native economies but dramatically reshaped Native cultures in ways beyond European control or comprehension. The arrival of substantial numbers of colonists also sparked complex changes in the natural environment, with serious implications for Indian farmers and hunters everywhere. Again, these changes occurred in ways no newcomer could have anticipated. Finally, Europeans unwittingly imported microbes that scythed through one Native community after another and reshaped the human landscape in the most potent way of all. Within a generation or so, this trio of economic, ecological, and epidemiological forces remade Indian country into "a world every bit as new as that confronting transplanted Africans or Europeans" in the same period. Native people, of course, did not literally travel to this "Indians' New World," but the changes forced upon them were just as profound as if they had resettled on unknown shores. Far into the continental interior, impersonal material forces remade Indian country long before any substantial numbers of Europeans left their coastal enclaves.[1]

In 1564 approximately three hundred Huguenots—French Protestants—built a colony they called Fort de la Caroline in Timucua country, near present-day Jacksonville, Florida. This intrusion did not go unnoticed by the Spaniards who claimed *la Florida*. Within a year, *adelantado* Pedro Menéndez de Avilés established a post at St. Augustine and marched his troops forty miles to the north to slaughter the Frenchmen, whom he regarded not only as trespassers but as vile heretics. Thus began a Spanish occupation of strategic spots in the southeast that would last for nearly two hundred years. Meanwhile, far to the north, from Newfoundland to the appropriately renamed Cape Cod, English, French, and Basque fishing fleets became regular visitors. Some of the Europeans set up semipermanent camps on the coast, where Native people increasingly exchanged the pelts of beaver and other furbearing animals for manufactured goods. For a generation, these incursions on southern and northern coasts—joined by occasional failed efforts such as the short-lived English attempt to colonize Roanoke Island in the 1580s—remained the only permanent European presences on the continent. Then, in rapid succession, in 1607 English adventurers moved into the Chesapeake Bay and established Jamestown, in 1608 French traders and missionaries built Québec on the site of Stadacona, and in 1609 Henry Hudson sailed up the river that came to bear his name. Within less than two decades, such well-financed European trading companies as the Dutch West India Company (chartered in 1621), the Company of New France (the Hundred Associates, 1627), and the Massachusetts Bay Company (1629) built upon these efforts and shipped thousands of families not just to the Atlantic coast but to spots well in the continental interior, such as present-day Albany, Montreal, and Springfield.[2]

When European people arrived in large numbers, so did European objects, and up and down the Atlantic seaboard Native Americans quickly became enmeshed in a new system of intercultural commerce with profound effects on everyday life. At first the changes seemed natural and entirely positive; their cumulative impact on society as a whole became apparent only after they had become irreversible. The glass beads and bits of metal that provided most Indian people their first evidence of Europe's existence fitted seamlessly into existing patterns of small-scale exchanges of rare items. As the pace of trade quickened and European goods be-

came more common, imports continued to be integrated into familiar cultural niches. Most often in the early years, European manufactures became raw materials to be processed by indigenous technologies for indigenous purposes. A copper kettle, for instance, was likely to be immediately cut up into small pieces by its original owners—or, more often, by people much farther along the redistribution chain—and turned into ritual items, jewelry, cutting implements, or weapons. Iron goods such as axeheads and knives were routinely reprocessed into needles, awls, and a variety of other sharp tools. As late as 1600, in most areas of eastern North America, the Native people valued material goods from Europe primarily as raw materials to be fashioned into familiar kinds of objects and as markers of the privileged status earned by those with access to them. Both uses derived their significance from Native contexts, rather than from the European economic and social environment for which the goods had originally been designed. A kettle was prized for its copper, not for its carrying capacity, and that copper was likely to be fashioned into an ornament hung conspicuously around a headman's neck to display his powerful connections to its source.[3]

Only after the establishment of large-scale European colonies—and the much bigger and more predictable patterns of trade they allowed—did Indians begin to use imported goods in ways that resembled the purposes for which they had been designed. Initially, permanent European settlements, whose officials almost invariably attempted to enforce government-sanctioned trade monopolies on competitors from their own or other nations, may in fact have narrowed the range of goods available to Indian customers. At Tadoussac, on the Gulf of St. Lawrence, for instance, the twenty or more vessels whose traders used to jostle one another annually had been reduced by 1620 to two French company ships. But what the new colonial order may have lacked in variety, it more than made up for in predictability and quantity of goods. "These two ships," a Jesuit missionary reported, "bring all the merchandise which these gentlemen use in trading with the savages; that is to say, the cloaks, blankets, nightcaps, hats, shirts, sheets, hatchets, iron arrowheads, bodkins, swords, picks to break the ice in winter, knives, kettles, prunes, raisins, Indian corn, peas, crackers or sea biscuits, and tobacco."[4] When brass kettles became available by the dozen, iron knives by the gross, and woolen cloth

by the yard, they ceased to be treated as raw materials and instead became direct replacements for traditional Native items: brass kettles for ceramic pots, iron axes for stone celts, woolen blankets for animal skins. The new things were always in some practical way superior to the old—lighter, sharper, more durable—but they were used in very familiar contexts. Even the addition of maize and tobacco (grown elsewhere in the Americas and in the Caribbean) to the inventory of the Tadoussac traders probably had strong Native precedents among northern Algonquian hunter-gatherers who had long exchanged meat and skins for the produce of their Iroquoian agriculturalist neighbors.[5]

The seamless way in which the new trade goods slipped into familiar cultural patterns may at first have obscured the deep changes that they caused, but by no means were all those changes negative. One of the most important of the familiar uses to which the new items were put was as tools. For Indian men and women, any number of everyday tasks became much easier. Something as basic as firemaking was radically simplified not just by axes that made firewood more readily obtainable but by flint and steel "strike-a-lights," which made the cumbersome practice of carrying smoldering coals in specially treated tortoise shells obsolete outside the ceremonial realm, where it continued to be used to kindle ritual council fires. Similarly, more easily started blazes, along with metal ladles and kettles, transformed cooking technology. "Now they generally get kettles of brass, copper, or iron," New England Indian superintendent Daniel Gookin wrote of his mid-seventeenth-century Native neighbors. "These they find more lasting than those made of clay, which were subject to be broken; and the clay or earth they were made of, was very scarce and dear."[6] Brass kettles were not only stronger than earthenware (or the hollowed-out wooden troughs also previously used for cooking), but they could be easily transported almost anywhere and be placed directly over flames. It was no longer necessary to heat rocks on coals and then to place them carefully in a heavy, fragile pot to raise broth to a boiling point. At home, soup could simmer almost untended in a kettle hung directly over a fire all day and night. In a hunting camp, hot meals became regularly available for the first time once both kettles and fire became easily transportable.[7]

New tools and new materials made life not only easier but, in countless

ways, aesthetically richer. Beadwork of all kinds flourished with the influx of glass baubles and the needles, thread, and cloth needed to mount them. Anything carved of wood, shell, antler, bone, or soft stone achieved hitherto unimagined realms of complexity once iron knives, chisels, and awls replaced their flint predecessors. Animal, human, and other-than-human forms could be rendered in unprecedented detail. The difference in effect upon even such a mundane item as a decorative hair comb was dramatic. Among Northern Iroquoians, combs that had had no more than five thick teeth and had been ornamented with simple abstract images blossomed into works of art with as many as twenty-five thin teeth and elaborate zoö- or anthropomorphic designs, some of which apparently memorialized a specific event in the owner's life. Much of the new artistic energy unleashed by imported tools went into artifacts associated with the spiritual realm: ritual masks, ceremonial pipes and staves, and, most notably of all, the entire complex of ritual and practice associated with sacred wampum beads.[8]

"With this wompompeage they pay tribute, redeem captives, satisfy for murders and other wrongs, [and] purchase peace with their potent neighbors, as occasion requires," said Gookin; "in a word, it answers all occasions with them, as gold and silver doth with us."[9] Archaeological evidence indicates that beads made from the shells of the whelk and the quahog clam, respectively white and "black" (actually purple) in color, were highly prized in much of eastern North America long before European contact. The relatively rare pre-European-contact beads came in many sizes and shapes, but "true wampum"—small tubular beads finely drilled for stringing—became possible only with the introduction of iron tools. In the 1620s, as Dutch traders established their trading settlements in the Hudson Valley region, they discovered a huge market for shell beads and introduced standardized techniques for wampum manufacture to Algonquian peoples of the southern New England coast, where whelk and quahog were abundant. By the late 1630s the tiny beads were being churned out by the tens of thousands, to be traded for European manufactures from the Dutch, who would in turn exchange the wampum for furs from peoples farther in the interior. Iroquoian-speakers, in particular, made wampum beads, strings, and belts integral to much of their religious and political life. At midcentury, as many as 3 million individual

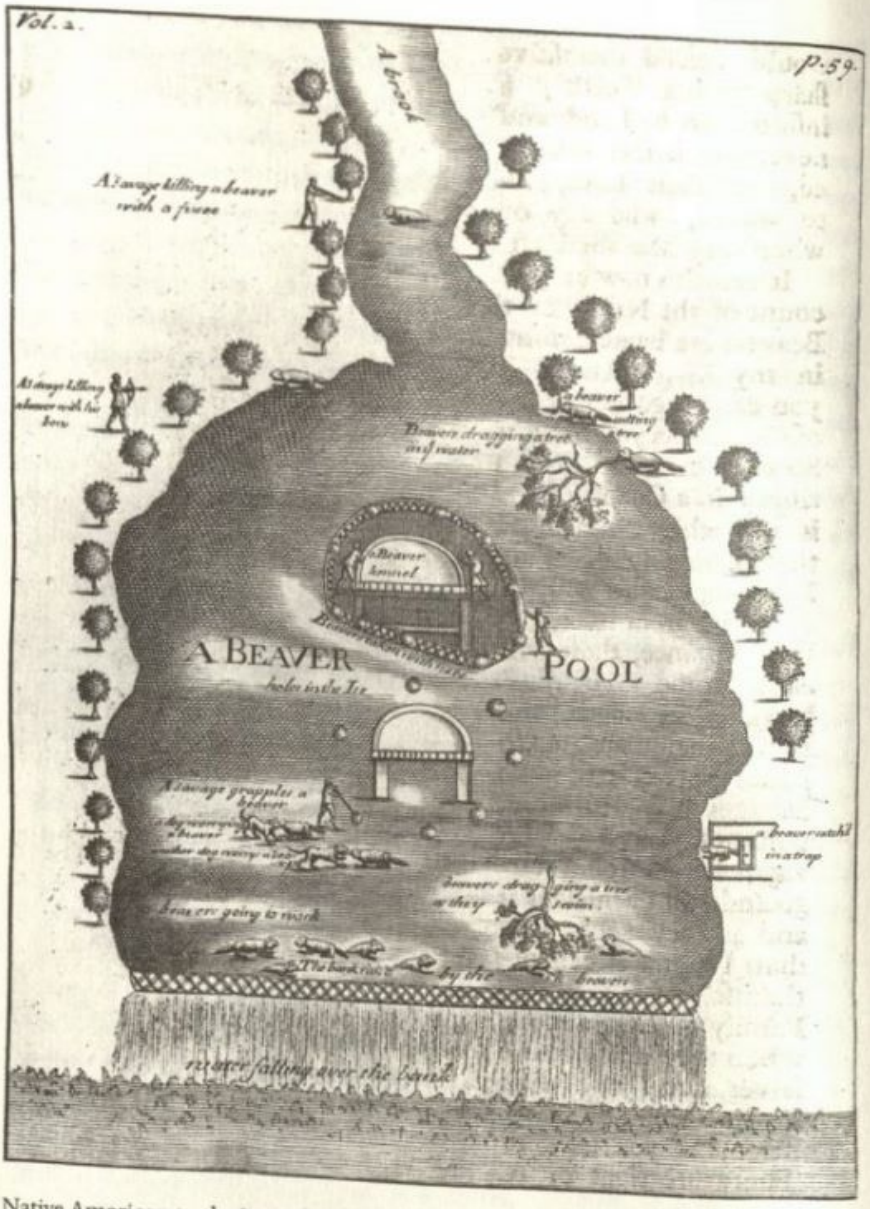
wampum beads were in circulation in the countries of the Five Nations Iroquois alone, nearly 300 for each man, woman, and child. The vastly increased supply did not so much devalue what was once rare as create an innovative cultural phenomenon rooted in unprecedented abundance.[10]

The direct and indirect impact of such simple implements as the iron awls that made wampum possible, then, could be profound. Trade with Europe produced a vast efflorescence of traditional forms that sometimes, as in the case of wampum, mutated into entirely new—but indigenously rooted—patterns. Thus the mortuary ceremonialism that had, for centuries, apparently been the driving force for cultural interaction and long-distance trade in eastern North America blossomed after the discovery of Europe. In countless local variants, the practice of interring artifacts with the dead expanded to unprecedented dimensions, even among peoples who had apparently not previously engaged in it. In the Huron country, the periodic Feast of the Dead, in which the bones of the recently deceased were reburied in a communal grave, became a massive ceremonial redistribution of trade goods. Among peoples who did not practice group burials, brass kettles, iron tools, strike-a-lights, and imported weapons routinely accompanied individuals to the villages of the dead, along with glass and shell beads and ritual items made with or by trade goods. One Seneca girl who died in the 1650s, for example, rested under belts and necklaces made of some 43,000 wampum and glass beads, most of them presumably contributed not by her own relatives but by the clan whose ceremonial obligation it was to conduct her funeral. In New England, meanwhile, headmen took with them to the grave the wampum, clothing, and jewelry that marked their rank. And aboveground in much of the northeast, cemeteries that may have been the first levels of incipient burial mounds briefly became elaborate shrines filled with images intricately carved with imported tools—until they became all-too-visible invitations for European grave robbers seeking the treasures buried beneath.[11]

Imported tools, then, had great and sometimes unanticipated impacts. This was also the case with weapons, which were, after all, only specialized kinds of tools, used for hunting as well as for war. As tools for hunting, firearms were hardly the most important new imports. Early seven-

teenth-century matchlock muskets were so heavy that they had to be propped on a forked support to be fired, and they were virtually useless in wet weather, which tended to extinguish the smoldering length of fuse used to ignite the gunpowder. That ignition produced a loud report prior to a still louder blast that expelled the ball from the barrel; swift prey such as deer or birds got a split second's warning to flee, and the hunter had no chance for a second shot, which could occur only after an awkward reloading of the weapon through its muzzle. The fact that the animal was in flight before the gun finished firing may not have mattered, however; unrifled barrels and inconsistently sized shot made muskets so inaccurate that they could be aimed in only the general direction of a target anyway. Finally, if a ball did make contact, it was likely to do severe damage to a valuable pelt or hide. All told, for hunting, the bow and arrow remained more predictably accurate, stealthily quiet, quickly reloadable, and reliably lethal.[12]

But neither arrows nor guns were the favored weapon for hunting the furs most sought after by traders seeking to fill an insatiable European demand for broad-brimmed felt hats made from beaver pelts. "The castor or beaver is taken in several ways," an early French missionary reported. In springtime, "a trap baited with the wood it eats" caused "a heavy piece of wood" to crush the prey. Winter hunts involved varied assaults on the dams in which the creatures lived. "A net made of good, strong, double cord" might be submerged with bait into a hole cut in the ice nearby. Or, more frequently, hunters would use trade hatchets to break open the upper story of the beaver dam (no easy task, because "the materials of which it is composed are wood and mud, so well joined and bound together") and then bludgeon the animals as they escaped into the water from a lower exit and tried to surface in order to breathe. Hunters strode "over the pond or frozen river, carrying a long club in their hands, armed on one side with an iron blade made like a carpenter's chisel, and on the other with a whale's bone," the missionary explained. "They sound the ice with this bone, striking upon it and examining it to see if it is hollow; and if there is any indication of this, then they cut the ice with their iron blade," slaying the beaver "with their big club, which they call *ca ouikachit*." That specialized club (for which both the whalebone and the



Native American techniques for hunting beaver.

From Louis Armand de Lom d'Arce, baron de Lahontan, *New Voyages to North-America* (London, 1703). Dechert Collection, Annenberg Rare Book and Manuscript Library, University of Pennsylvania.

iron cutting edge were acquired from European traders) provides a gruesome example of the role played by imported goods in technological innovations that were rooted in Native traditions.[13]

Here, as with other sorts of weaponry, the fundamental innovation was not firearms, but the introduction of metal cutting edges. Hatchets and war clubs embedded with iron blades made hand-to-hand combat far deadlier than stone and wood alone. More importantly, arrows tipped with brass were significantly more lethal than those with flint heads. Their lighter weight allowed them to travel faster and truer, and their keener edge could pierce the wooden armor that protected warriors from most traditional arrows. The advantage for people equipped with even small supplies of brass was substantial. Not surprisingly, an arms race began very early, in the years when iron axeheads and brass kettles were valued primarily as raw materials for Native manufactures. Many of the reprocessed pieces of brass archaeologists have unearthed from late sixteenth-century sites are projectile points. And as late as 1610, northern Algonquian peoples who had a secure source of French trade goods had the upper hand over inland Iroquoian foes who still relied on arrows like the one "tipped with a very sharp bit of stone" that wounded Frenchman Samuel de Champlain in that year. The only iron axes the Iroquois possessed, Chaplain reported, were those "which they sometimes win in war."[14]

Within two decades, however, the proliferation of European settlements had introduced enough metal into North America to promote a rough balance of power among the surviving participants in this first arms race. As intercultural trade in general moved into a phase when plentiful imported goods began to be used intact rather than as raw materials, firearms became one of the most intensely sought after of those goods. By the 1620s one of the major drawbacks of early muskets was being overcome, as "arquebuses" or "snaphaunces" with flintlock mechanisms began to replace cumbersome matchlocks. But for the most part it was precisely the same qualities that made muskets inferior hunting weapons that made them so desirable in human combat: their frightful noise and confusing smoke, their unpredictable inaccuracy, their awful ability to smash flesh and bone. As outnumbered early European colo-

nists well understood, the psychological edge such firearms provided was enormous; the practical benefit of keeping bowmen pinned down and out of range was greater still.[15]

Despite official policies in all colonies designed to preserve a European monopoly of force, the incentives on both sides of the trading relationship were so great that well-placed Native people inevitably acquired firearms sooner rather than later: by the late 1610s in the Chesapeake region, by the early 1620s in southern New England, by the late 1630s in the Great Lakes area. Used in combination with brass-tipped arrows, iron hatchets, and modified clubs, firearms evened the odds against Europeans, as English forces who tried to storm a Virginia Algonquian village in 1622 learned from Native defenders who ambushed them with "some shot out of English pieces" while others "shot with Arrows manfully."[16] But the effect against Native opponents who owned no such weapons was even more dramatic. Near Montreal in June 1643, for example, a party of Huron canoeists floating down the St. Lawrence River was surprised by some forty Mohawk Iroquois, who sprang from behind trees to "fall upon them, frighten them with their arquebuses, put them to flight, and take twenty-three of them prisoners, with their canoes and the peltry."[17]

That episode—typical of countless raids that Iroquois war parties carried out on less well-armed Indian neighbors in the 1640s—illustrates a skillful integration of the shock value of firearms with other battlefield tactics and explains the tremendous Indian demand for the new weapons. The attack also suggests the economic importance that beaver pelts had come to have for Native Americans. For weapons, tools, and any number of basic commodities of everyday life, the fur trade had become absolutely crucial. "The Beaver does everything perfectly well," one headman joked to a French missionary in the early 1630s; "it makes kettles, hatchets, swords, knives, bread; and, in short, it makes everything."[18] Those marvelous qualities of the furry rodent gave it vast influence over seventeenth-century Native American life. The ease with which peltry could be exchanged for mundane commodities allowed a great efflorescence of Native artistic expression; energies and ingenuity that previously would have gone into such basics as making durable pots or chipping usable stone-cutting tools was now freed for finer work with imported tools and materials. Over time, disuse eroded more mundane craft skills. Among

artifacts recovered from mid-seventeenth-century Iroquois sites, for instance, considerably less than half are of native manufacture, and flint projectile points, stone tools, and ceramic pots are virtually absent.[19] The inability to make a decent pot or airworthy flint arrowhead (even if one had wanted such things) meant that their replacements now *had* to be purchased. Ironically, to continue to live as "Indians," Native people needed to trade with Europeans. And to trade with Europeans, Native people needed beaver pelts or something equally valuable, such as the ability to make wampum.[20]

The social and cultural implications of the beaver pelt's economic importance were many and deep. Male work habits and migratory patterns transmuted in ways that oriented winter and spring hunts almost entirely to beaver; among the northern Algonquian hunter-gatherers in whose territories the thickest, most desirable pelts were found, commercial hunting was likely to crowd out almost all other economic pursuits, and to make communities almost entirely dependent on European trading partners for nearly all their supplies. Farther south, where women's agriculture remained the economic mainstay of villages that were, as a result, able to preserve much more of their traditional stability, winter hunts were nonetheless likely to take men farther from home for longer periods than previously. Quite likely, they would have to enter contested or enemy territory to get the prized pelts, as did that Mohawk war party in 1643.[21]

Wherever the beaver were found, and for hunter-gatherers and agricultural peoples alike, the vast explosion of material wealth profoundly reshaped patterns of social interaction and political authority. As with material transformations, the social impact seldom involved the direct mutation of Indian into European cultural patterns. There is little evidence from the early to mid-seventeenth century that anything resembling the acquisitive, individualistic, profit-seeking values of Western European capitalism became widely sanctioned in eastern Native America, where traditional economic patterns remained strong. Individuals who engaged in openly acquisitive behavior encountered social disapproval rooted in almost universal Native attitudes toward property rights, which emphasized need and use rather than possession and accumulation. Food, clothing, tools, houses, land, and other forms of property belonged to in-

dividuals and families, but only to the extent that they could make active use of them. Conversely, excess or abandoned property should be made available to those without. To hoard goods when others needed them was one of the most extreme forms of antisocial behavior.[22] In this context, status and authority went not to those who *had* the most, but to those in a position to *give* the most away. When headmen wore copper and wampum or otherwise exhibited markers of wealth and power, therefore, it was less to show what they possessed than what they were able to provide for their people. "The chiefs are generally the poorest among them," explained one Dutch colonist, "for instead of their receiving anything . . . these Indian chiefs are made to give to the populace."[23] But of course such chiefs *did* have to receive the goods they distributed from somewhere—from nearby communities that owed them tribute, from control of vital trading connections, from contributions members of their extended families made to the collective resources of their clans, and from villagers at large, who, at least in some Algonquian-speaking societies, owed a sort of tax in labor or food to replenish the stores from which chiefs demonstrated their largesse.[24]

There is little evidence that any of these basic values, with their emphasis on reciprocity and redistribution of goods, changed in most seventeenth-century Native communities. What did change in major ways, however, were the kinds of individuals and groups who controlled the redistribution of resources. Formerly weak villages that may have owed tribute to larger and more powerful neighbors could be transformed into dominant powers by their geographical proximity or political ties to European trading partners. Similarly, within communities, an age-graded and kin-based leadership structure in which headmen and clan mothers regulated the flow of goods and political allegiance faced disruption when skillful young hunters acquired wealth that they could redistribute independently of their elders and kinswomen—or even use to make those traditional leaders jump to their tune.[25] A group of Dutchmen traveling in the Mohawk Iroquois country in 1634 witnessed one such bid for status when "a good hunter named Sickaris" took advantage of the fact that the two principal headmen of the village were absent hunting and usurped their privilege of entertaining the visitors, making sure that they saw "in his house 120 pelts of marketable beaver that he had caught with his own hands" and no doubt intended to use to purchase European goods for redistribution to his followers.[26] In such ways, traditional forms of economic and political behavior remained intact even as traditional patterns of status and authority eroded. The forces of economic change unleashed by European colonization interacted with Native American practices to produce a new world that neither colonists nor Indians could previously have imagined.

The arrival of large numbers of Europeans in the early seventeenth century also transformed the relationship between human beings and the environment in complicated and unpredictable ways. Nothing better illustrates the ecological forces at work than the results of the extensive beaver hunting that was so central to the economic transformation of Native life. Not surprisingly, the great economic demand for beaver pelts led to overhunting and, in turn, to temporary regional extinctions. The effect was exacerbated by wasteful destruction of beaver dams, and thus of the nesting places of young animals whose mothers were taken. Large areas of New England and present-day New York and Pennsylvania were probably empty of the creatures by the 1640s. The effect on the species as a whole was, in the long run, minor; populations of beaver can quickly rebound if left unhunted. But even the temporary removal of an organism from a regional ecosystem can have substantial effects. And, apart from human beings, few organisms more strikingly transform the shape of the ecosystem they inhabit than do beavers.[27]

The ponds that formed behind beaver dams did more than hold water; they trapped soil runoff and decaying organic material from surrounding areas, which might otherwise have washed away in spring floods. Water instead seeped gradually through what were, in effect, "irrigation works and reservoirs to preserve watersheds and equalize stream flows" throughout the year. The still pools and slow flow fostered an increase in water temperatures that encouraged the growth of plankton and insects, and thus of the fish and waterfowl that fed on them. Dead, fallen, and waterlogged trees provided habitat for still other insects, birds, and small mammals, while aquatic plants and the new growth that sprouted from

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the trunks of trees felled by beavers provided forage for deer, moose, and bear. Before the commercialization of hunting, beaver of course occasionally moved on and abandoned their dams, and when those structures collapsed, they exposed fecund sedimentary soils that soon became rich meadows. But when beaver went virtually extinct in an entire region, the results were far less benign. Fewer dams meant increased water flows and thus soil erosion, which destroyed complicated habitats and made scarce the deer, fish, and fowl that exploited them—and which had long been important food resources for Native people. Meantime, the expansive meadows left behind when dams disappeared became desirable haying and pasturage lands for the European families who arrived in such great numbers beginning in the 1630s. "Without these natural meadows," a New England colonist later concluded, "many settlements could not possibly have been made."[28]

And Europeans possessed and used meadows and the rest of the landscape in ways dramatically different from those of Native Americans. Those differences did not stem from the concept of ownership of private property per se. Native people certainly were familiar with the idea that the rights to farm, hunt, or fish on particular parts of the landscape could be owned, although those rights were usually vested in kin groups and villages, rather than in individuals as in England or France. Even that latter contrast was not so marked, for individual ownership was not absolute in early modern Europe either, where property was still encumbered by feudal obligations, where towns owned pastures and woodlands in common, and where patriarchs tended what were, after all, "family" farms. Not ownership itself, but the *meaning* of ownership was what set eastern Indians and western Europeans apart. Native communities treated land as a "resource," which could not in itself be owned any more than could the air or the sea. As with other forms of property, what people owned was the right to use the resource for a particular purpose—to farm, hunt, fish, gather wild plants, procure firewood, build a village—and these rights were not necessarily exclusive or permanent; once a resource was no longer being used, ownership rights faded. Europeans, by contrast, treated land as a "commodity" that was itself inherently and irrevocably owned, along with all its resources. Use had nothing to do with it; a vacant lot was still the exclusive property of its owner, a fixed feature

of the landscape. When European "fixity sought to replace Indian mobility," an irreconcilable "conflict in the ways Indians and colonists interacted with their environments" came to the fore.[29]

The contrasting modes of interaction between humans and their environment are illustrated by the ways in which Native and European agriculturalists used the land. Perfected relatively recently during the Medieval Optimum and honed in the harsher conditions of the Little Ice Age, Indian agriculture was supremely adapted to the eastern North American environment. Its productivity put its European counterpart to shame. Annual eastern Indian corn yields may have been nearly nineteen bushels per acre. Although that return was roughly equal to what European cereals provided under similar environmental conditions in the same period, it was achieved with far fewer individual plants: one kernel of maize might return as many as two hundred kernels at harvest, yet contemporary wheat yielded only about fifteen grains for each seed. A western European acre thus had to be densely packed with a single crop, but a North American acre had plenty of room left for beans and squash as well as corn. All three were planted in the same hills, and as they grew together, bean vines climbed the natural support of the corn stalks while the nitrogen-fixing nodules in their roots returned the favor by fertilizing the soil. The squash plants, meanwhile, spread their leaves everywhere to provide natural weed control. Together, the Three Sisters thrived on an agricultural process of impressive simplicity. A digging stick to make a hole in which to plant the seeds and a hoe to build up a hill around the growing plants were the only tools necessary. Once the squash vines began to spread, almost no weeding or other tending was necessary until the crops matured. By sweat-of-the-brow European plow-and-sickle standards, remarkably little work was involved.[30]

Corn, beans, and squash reinforced one another in the cooking pot as well as in the field. Beans are an excellent source of the essential amino acids lysine and tryptophan, both of which are present in maize in such small quantities as to make that grain's nutritional value on its own very low. But lysine and tryptophan combine with the principal amino acid in maize, zein, to produce a highly nutritious protein, allowing the two foods together to accomplish what neither could do alone. Moreover, maize contains a higher proportion of carbohydrates and sugars than

Seventeenth-century Huron women grinding corn.
From François Du Creux, *Historiae Canadensis, seu Nouae-Franciae libri decem, ad annum usque Christi* (Paris, 1664). Dechert Collection, Annenberg Rare Book and Manuscript Library, University of Pennsylvania.

other cereal grains; when processed with lime or roasted over an open fire, it also releases substantial niacin. Squashes, baked or boiled, are an excellent source of C and other vitamins. Supplemented with game and fish and wild fruits and berries, the resulting diet was far superior to anything crooked-boned, bad-teethed Europeans—who worked so hard for their daily bread, and little else—could imagine.[31]

But all of this Indian abundance depended on a kind of mobility and flexible use of the landscape that would prove incompatible with the colonists' ways of interacting with the environment. The one thing the North American environment failed to provide was an animal species that could have been efficiently domesticated for food. Necessarily, then, hunting, fowling, and fishing continued to make crucial contributions to Native American diets long after the agricultural revolution had made corn, beans, and squash the major staples. Fishing, in particular, was vitally important. In inland areas it might contribute as much as 20 percent of an otherwise agricultural diet; in areas closer to the sea, entire villages relocated seasonally to take advantage of maritime abundance while their crops matured unattended some miles inland. Fishing and hunting required far more extensive territories than the area occupied by a village and its surrounding fields. These territories surrounding Indian towns thus were far from empty, and far from unused. Indeed, forests were frequently managed with deliberately set fires that cleared out the underbrush and encouraged the growth of young plants on which deer and other small game fed.[32]

Even the most settled and apparently fixed element in the Native landscape—the agricultural village—depended on an extensive and flexibly used territory. The same women who cultivated the fields also collected wild plants from far-flung locations. More importantly, despite the efficiency of Native agricultural practices and the fertilizing benefits of annual burnings of the previous season's stubble, soil gradually lost its productivity, and new fields regularly had to be opened ever farther from a village. Meantime, hundreds of people dependent on wood, bark, and vegetable fibers to make everything from houses to baskets had a voracious appetite for trees; together the two trends gradually leveled most nearby forests. In an Indian town itself, wood and bark construction materials steadily rotted, while houses and storage pits became infested with insects and other pests. After about two decades, a village site thus outlived its usefulness, and a community had to move on to start over in a different locale, usually a few miles away. These factors explain why permanent Mississippian cities had had to depend on a network of relocatable outlying agricultural villages to support them.[33]

Wherever large numbers of Europeans took up residence, new kinds

of boundaries imposed themselves on the formerly flexible landscape. The ecological impact of European agricultural "fixity" went much further than the erection of fences around agricultural fields and pastures. Where Native women had cultivated their multiple crops in elegantly messy tracts that shifted in location over the years, Europeans plowed vast expanses clean, sowed a single crop per field, removed the stubble or allowed their grazing livestock to consume it, and planted repeatedly until the soil was exhausted. To make way for these fields, trees had to be cut down. The denuded soil that was left behind became far more subject to erosion, and the ecological uniformity of single-cropping had the paradoxical effect of encouraging specialized weed and insect pests that might otherwise never have gotten a foothold and might now just as well attack Native as European fields.[34]

Ironically, however, the most mobile aspect of European fixity—livestock—virtually ensured that the environment in which Native people had lived would lose its fluidity. Wherever horses, cattle, chickens, and pigs went, they took over ecological niches formerly occupied by wild game whose existence was already being threatened by clearings, plows, and fences. Particularly in the early years of European colonization, when land was plentiful and human labor scarce, most of these "domesticated" animals were left to forage for themselves for most of the year. Chickens roamed farmyards and village streets at will. Horses, cattle, and sheep grazed pastures and meadows clean, further depleting plant biodiversity and leaving little for wild competitors to eat.[35] Pigs, meanwhile, wandered everywhere and ate everything. Unlike horses, cattle, and chickens, they served no purpose except as food. With no daily need to be yoked, milked, or egged, their foraging grounds tended to be farther from European villages, and their owners—who branded them or notched their ears in distinctive patterns so they could recognize them—might not see them for weeks on end. Far from home, in the woods, they omnivorously gobbled everything that deer, elk, moose, or bear might have dined on; starved game simply disappeared. At the seashore, pigs were likely to dig up clams before Indian women could get to them. Worse still, the wayward porkers regularly emerged from the woods to wreak havoc among corn, beans, and squash in Native fields that, unlike those in European villages, were traditionally unfenced. Pits in which food was stored also

proved irresistible to animals whose snouts were designed for rooting. No wonder, concluded English colonist Roger Williams, that "of all English cattle, the swine (as also because of their filthy dispositions) are most hateful to all Natives, and they call them filthy cut throats, etc."[36]

The arrival of European farmers—with their roaming livestock, their concepts of fixed property, and their single-crop plow agriculture—combined with the ecological impact of the fur trade to transform utterly the material environment of much of eastern North America and make traditional patterns of life impossible anywhere in the vicinity of European settlements. European and Indian ways of using the land could no more share the same ecosystem than could matter and antimatter share the same space. "Our fathers had plenty of deer and skins, our plains were full of deer, as also our woods, and of turkeys, and our coves full of fish and fowl," the Narragansett headman Miantonomo concluded in 1642. "But these English having gotten our land, they with scythes cut down the grass, and with axes fell the trees; their cows and horses eat the grass, and their hogs spoil our clam banks, and we shall all be starved."[37]

Starvation, however, was a mild fate compared with the third great material force that joined economic and ecological transformations to reshape Indian country: disease. Although the role of imported viral ailments in sixteenth-century North America in general remains a matter of controversy, it is clear that by the 1580s European microbes were levying a serious toll in some locales. The English party that attempted to establish a colony on Roanoke, off the coast of present-day North Carolina, in 1585 marveled that Native "people began to die very fast, and many in short space" after the newcomers visited their villages. "In some towns about twenty, in some forty, in some sixty, and in one six score" perished.[38] Roughly two hundred miles to the north and two decades later, the Virginia Algonquian leader Powhatan observed cryptically that he had "seen the death of all [his] people thrice, and not one living of those three generations, but" himself. It is unclear whether his reference was to epidemics spread from Roanoke or elsewhere or a metaphor for the painfully gained wisdom about "the difference of peace and war" that he had accu-

mulated as a man who was "old, and ere long must die." In either case, death was a pervasive presence in Indian country.[39]

Diseases entered a fatal new phase after 1600, when for the first time substantial numbers of European families—including the youngsters most likely to carry viral "childhood diseases"—began to settle in eastern North America. The medical carnage was frightful—and made more so because it occurred at precisely the moment that Native people were also being forced to come to grips with the economic and ecological implications of the arrival of large numbers of Europeans. In 1617, what one English colonist described as "a great mortality" struck both Jamestown and its Native neighbors; its impact was "far greater among the Indians," who endured repeated bouts over a three-year period.[40] Almost simultaneously, from 1616 to 1618 along the southern New England coast, an epidemic or series of epidemics killed perhaps 75 percent of the coastal Algonquian population. Entire towns—including that of the later famous Squanto—disappeared, with no one remaining to bury the dead. A few years after, Englishman Thomas Morton found so many "bones and skulls" lying about that he could only compare the scene to "a new found Golgatha."[41] In the early 1630s, a smallpox epidemic—the first disease outbreak the sources allow us to identify positively by name—whipsawed through the Great Lakes region, cutting such populous peoples as the Iroquois and Huron confederacies in half. Yet the dying had just begun. Dutch colonist Adriean van der Donck was not exaggerating when he reported in the 1650s that "the Indians . . . affirm, that before the arrival of the Christians, and before the small pox broke out amongst them, they were ten times as numerous as they now are."[42]

It takes more than a little historical imagination for us to fathom what it must have meant to watch most of one's fellow villagers die or to be among the few to survive when everyone else succumbed. Modern studies of "virgin soil" epidemics not only confirm the likelihood of the appalling death rates, but also outline some particularly cruel patterns in the distribution of victims within a given community. Viral infections such as smallpox, measles, chicken pox, and mumps strike hardest not at the weakest but the strongest age groups—those between ages fifteen and forty, whose fully developed immune systems produce the most violent reactions in the form of the pustules, swellings, and fevers characteristic

of these diseases. With literally everyone sick, and the able-bodied adults more incapacitated than the rest, the everyday work of raising crops, gathering wild plants, fetching water and firewood, hunting meat, and harvesting fish virtually ceased. Thus the old and the young ill received little fresh food and next to no nursing care, opening the door to opportunistic secondary infections that could kill just as surely as the principal viruses. So, many young and elderly victims who otherwise might have survived their relatively mild struggles with diseases also died because the young adult caregivers who might have nursed them to health were themselves so appallingly stricken. Moreover, any care that was given was likely to be counterproductive. Communal healing rituals in which villagers crowded around the victim provided opportunities for viruses to spread further, while the sweats and fasts that were central to those rituals in most Native cultures exacerbated conditions that are best treated by keeping the patient's skin dry and the body well nourished.[43]

Those who "fell sick of the small pox," wrote Plymouth Colony governor William Bradford,

> died most miserably; for a sorer disease cannot befall them, they fear it more than the plague. For usually they that have this disease have them [the pox] in abundance, and for want of bedding and linen and other helps they fall into a lamentable condition as they lie on their hard mats, the pox breaking and mattering and running one into another, their skin cleaving by reason thereof to the mats they lie on. When they turn them, a whole side will flay off at once as it were, and they will be all of a gore blood, most fearful to behold. And then being very sore, what with cold and other distempers, they die like rotten sheep. The condition of this people was so lamentable and they fell down so generally of this disease as they were in the end not able to help one another, no not to make a fire nor to fetch a little water to drink, nor any to bury the dead. But would strive as long as they could, and when they could procure no other means to make fire, they would burn the wooden trays and dishes they ate their meat in, and their very bows and arrows. And some would crawl out on all fours to get a little water, and sometimes die by the way and not be able to get in again.[44]

Despite such horrors, in any single epidemic, many survived; statistically, the odds were a little better than one in two. Those who caught and endured smallpox would be immune to it for the rest of their lives, although that said nothing about their chances against the battles with measles or influenza that probably lay in their future. Some communities were more fortunate than others: one village might remain a viable working unit; the next might be left with too small or demographically skewed a population to feed or defend itself. Refugees and remnants, families and fragments of families, individuals and ad hoc bands resettled and coalesced into new, polyglot communities that blended kinship structures, traditions, and dialects. In short, new peoples formed from pieces of the old. Most of the Native American nations that survive to our day were, to one degree or another, created in the melting pot set boiling by seventeenth-century epidemics.[45]

Clearly, the process was not random. Survivors apparently did not wander the landscape like either the walking dead or the violent renegades that populate our own day's cinematic visions of a future holocaust, but instead probably drew upon existing connections of real or fictive kinship, economic relationships, and linguistic affinities to recreate community life. But the process was far from peaceful and seldom pretty, particularly when combined with the economic stresses resulting from the simultaneous growth of dependence on European trade—stresses that could only be compounded as epidemics disrupted work patterns and erased craft skills that might otherwise have mitigated the demand for trade goods. The recoalescing population centers, then, were engaged in a desperate struggle against not just microbes but one another, as they scrambled for access to the resources necessary to survive: trade goods and the pelts to exchange for them, and—even more pressingly—the *human* assets needed to build and maintain a viable community. Indeed, it is probably not too much to say that people were the scarcest resource of all in the Indians' new world.[46]

So communities went to war with one another to obtain them. We will never know precisely how societies in the process of combining and redefining traditions, beliefs, and cultural practices first explained their demographic dilemmas to themselves and then took the decision to make war against one another to obtain human resources—or if, indeed, any

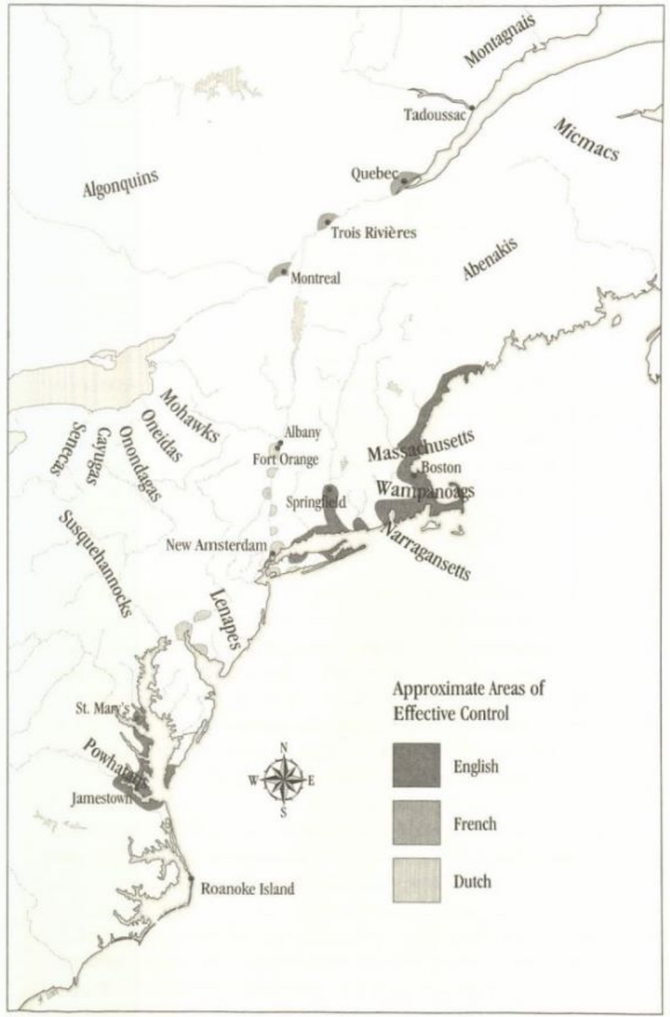
conscious collective decision ever was taken. Archaeological, linguistic, and folkloric evidence indicates that almost everywhere in eastern North America and long before contact with Europeans, warfare had involved the taking of captives, at least some of whom were either adopted or enslaved by the victors. Specific practices varied widely, from the forced incorporation of women and children, to the ceremonial torture and execution of male prisoners (whose spiritual power if not physical strength would thus be incorporated into the victorious group), to the unquestionably indigenous practice of scalping as a symbolic substitute for taking an enemy alive. However distasteful such practices might appear, there was nothing particularly unique or cruel about them. We need only remind ourselves of the ingenuity of Europeans in an age of drawings, quarterings, and beheadings, of the almost universal practice of enslaving war prisoners in human history, or of the modern-day killing fields of central and eastern Europe. The point is, that to one degree or another eastern North American Indians were familiar with the idea that warfare could be used to acquire people.[47]

The linkage between deaths from epidemic disease and warfare to seek replacements for the dead was complex and often indirect. Hints in early written sources confirmed by folklore recorded much later suggest that Native people generally did not regard epidemics as random natural phenomena. Disease was always someone's fault, a form of malevolent attack. That "someone" might be a person's own soul, frustrated in its pursuit of some end and expressing its displeasure in an attack on the body. More frequently it was a human or other-than-human person using disease as a weapon. The Algonquians of Roanoke seem to have interpreted the epidemics that struck villages visited by the English in precisely these terms. According to colonist Thomas Hariot, "they were persuaded that it was the work of our God through our means, and that we by him might kill and slay whom we would without weapons and not come near them."[48] A similar belief about the cause of disease among the Mohawk Iroquois is suggested by a mid-1630s encounter between a group of Dutch travelers and a headman who was called Adriochten (meaning "he has caused others to die") "living one quarter mile from the [Native] fort in a small cabin because many Indians . . . had died of smallpox."[49]

Disease, then, was perceived as the result of a hostile act, what Western

culture would call a "crime." In most human societies that are not organized as states, the response to crime tends to stress restoration for the victim rather than punishment of the offender; with punishment in the hands of family groups rather than a coercive state, endless cycles of revenge would otherwise result.[50] This must have been particularly the case when the alleged perpetrator wielded such a devastating and mysterious power as the ability to make others sicken and die; better to compensate the victim than to further enrage the perpetrator. According to Hariot, the Roanoke Algonquians "could not tell whether to think" the English who brought death with them were "gods or men." Similar fears of great spiritual power (a more accurate term perhaps than Hariot's "gods") might explain why the Mohawks banished the dangerous Adriochten from their village but otherwise left him safely alone. Families and communities who could not do anything about the aggressor focused their energies on curing the one who was attacked. Healing rituals often involved attempts to remove the disease weapon from the afflicted body, through sweats, purges, vomiting, or a shaman's efforts to suck a spiritual projectile from a wound; shamans, Hariot superciliously observed, "earnestly make the simple people believe, that the strings of blood that they sucked out of the sick bodies were the strings wherewithal the invisible bullets were tied and cast."[51]

When victims nonetheless died, the aggrieved parties were the families to which they belonged, and compensation might well take the form of filling the void that the departed's life and labor had left. In many areas of eastern North America, a cultural pattern known as the "mourning war" required young men to raid their enemies for war captives who would be adopted, enslaved, or ritually killed to replace the loss and ease the grief of those who mourned the death of loved ones. Mourning-war raids were, on a fundamental level, an extension of the grieving process, an integral part of protracted funeral rites by which the loss of loved ones was redressed and the balance of spiritual and material forces was symbolically restored. In keeping with a general principle of a justice that focused on the aggrieved rather than on the perpetrator, the target of a raid need not be directly to blame for the deaths that inspired a mourning war, although every people had traditional enemies who could be accused of almost any crime. What really mattered was the opportunity to take from



Eastern North America in the mid-seventeenth century: selected Indian nations and European outposts.

somewhere the prisoners who were the primary objective; booty, territorial gain, and other military benefits were distinctly secondary. The mourning-war pattern seems unquestionably old in eastern North America, but it assumed explosive new forms and vastly expanded scope under the demographic pressures of the seventeenth century. Particularly in a context of violent grief in polyglot communities with conflicting traditions and few clear sources of traditional authority, nice distinctions between restoration for victims and bloodthirsty revenge must frequently have blurred. In any case, only those communities fortunate enough to retain a critical mass of warriors, kinship structures, and ceremonial specialists could mount any effective response at all. Less fortunate individuals and family fragments had to seek refuge in stronger communities where they were welcomed as bodies to fill the void.[52]

For a quarter-century after the epidemics of the 1630s, no peoples were more successful in the desperate race than the Five Nations Iroquois, who raided far and wide to replenish their disease-ravaged population. A nineteenth-century descendent of the ethnic mixing that resulted recalled the oral tradition of the wars this way:

> Their plan was to select for adoption from the prisoners, and captives, and fragments of tribes whom they conquered. These captives were equally divided among each of the tribes, were adopted and incorporated with them, and served to make good their losses. They used the term, *we-hait-wat-sha,* in relation to these captives. This term means a body cut into parts and scattered around. In this manner, they figuratively scattered their prisoners, and sunk and destroyed their nationality, and built up their own.[53]

The targets of such raids, quite naturally, viewed the situation in a less favorable light. According to Gookin, reflecting the attitudes of southern New England Algonquians with whom he worked, the Iroquois

> manner is, in the spring of the year, to march forth in parties several ways, under a captain, and not above fifty in a troop. And when they come near the place that they design to spoil, they take up some secret place in the woods for their general rendezvous. Leaving some of their company there, they divide themselves into small parties, three, or four, or five in a company; and then go and seek for prey. These small parties repair near to the Indian habitations, and lie in ambushments by the path sides, in some secure places; and when they see passengers come, they fire upon them with guns; and such as they kill or wound, they seize on and pillage, and strip their bodies; and then with their knives, take off the skin and hair of the scalp of their head, as large as a satin or leather cap; and so leaving them for dead, they pursue the rest, and take such as they can prisoners.

For Gookin, the only "good effect the war had" on New England Algonquians driven from their homes was "to turn them from idleness; for now necessity forced them to labor with the English in hoeing, reaping, picking hops, cutting wood, making hay, and making stone fences, and like necessary employments, whereby they got victuals and clothes."[54]

These contrasting portraits of mid-seventeenth-century warfare powerfully convey the turmoil that the forces of economic change, ecological transformation, and epidemic diseases created—and the constraints those forces placed on Native Americans trying to come to terms with their new world. The range of choices, of course, was far greater than a plunge into the Iroquois melting pot on the one hand or manual labor for the English on the other. The demographic disaster of imported disease ensured that the Native communities that responded to ecological transformations and economic opportunities had to reinvent themselves, in countless ways large and small. The Indians' new world, then, was not merely the product of abstract material forces; it was also the creation of individuals and shattered families who recombined and reinvented themselves to survive in unprecedented circumstances. In all of this, eastern Native people were anything but passive victims unable to change. The profound economic, environmental, and epidemiological constraints

they faced make their efforts to rebuild Indian country more, not less significant. As Nathan Huggins once said of African American history, "it is exactly this triumph of the human spirit over adversity that is the great story."[55] The same is true for Native American history from the early seventeenth century onward.

3 LIVING WITH EUROPEANS

IT IS MUCH EASIER to reconstruct the abstract forces that constrained the seventeenth-century Native world than it is to recover the personal experiences of the people who struggled to give that world human shape. Early colonists recorded countless Indian names (as best they could reproduce them in the Latin alphabet) and glimpsed the activities of Indian people who visited them or in whose villages they sojourned, but they seldom developed any real understanding of their subjects' motives or broader experiences—and so, in most cases, neither can we. Nonetheless, a handful of individuals do emerge strikingly from fragmentary references in documents preserved from the period. Among them are three whose stories have been told repeatedly since then: the Virginia Algonquian "princess" Pocahontas, the Mohawk Roman Catholic candidate for sainthood Kateri Tekakwitha, and the Wampanoag Metacom, or "King Philip," who inspired a bloody war against Puritan New England. Verifiable evidence about these figures is so scant that it may never be possible to determine the "truth" about their lives, but enough information is available to reveal how each confronted the forces of material change and tried to incorporate Europeans into an Indian world on indigenous terms. Their stories illuminate the dilemmas that all seventeenth-century Native people faced.

Every North American schoolchild knows—or thinks she knows—the story of Pocahontas: