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PALEOINDIAN INTERACTION NETWORKS IN THE EASTERN WOODLANDS

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These are exciting times for Paleoindian studies in eastern North America. Because of the existence of a large, modern-day interaction network operating among scholars actively working in virtually every state and province, a tremendous primary database about the region's first inhabitants is rapidly being drawn together. As important as this data-sharing effort is, Paleoindian scholars from across the East are also sharing ideas, synergistically developing models by which to interpret the region's early archaeological record. At periodic professional meetings such as the Southeastern, Midwestern, Middle Atlantic, or Eastern States archaeological conferences, some of the individuals making up this interaction network assemble to share information about conditions in their respective areas. While the formal presentations are important in that they provide a ritualized framework for introducing the players and for laying out basic positions, much of the real work and interaction gets done in informal verbal exchanges, an activity typically assisted by the consumption of food and other forms of refreshment, as well as the swap-

I would like to thank Michael Nassaney and Ken Sassaman for encouraging me to prepare this chapter and for extensive comments on earlier drafts. I also owe a debt of gratitude to several individuals whose views on Paleoindian interaction behavior influenced much of what is presented here. In particular the ideas of Dena Dincauze, Michael Faught, Albert C. Goodyear, James L. Michie, Dan F. Morse, John Speth, and Henry T. Wright shaped my realization that Paleoindian populations had to interact to survive and that they had far more sophisticated cultural systems than we usually give them credit for having. The ideas and opinions expressed here are, of course, my own responsibility. Finally, Julie Barnes Smith deserves thanks, as always, for excellent artwork.

ping of prized objects including books, computer diskettes, or type specimens.

The observant reader can see where I am heading with this. In many ways, I believe, the activities of modern day archaeologists resemble, and can be used to illustrate, what I suggest was occurring in various parts of eastern North America just before and after eleven thousand years ago, when the region's first interaction networks were forming. That is, our own interaction behavior—the activities we observe and participate in ourselves—likely has its roots deep in our human past and offers lessons for understanding the Paleoindian archaeological record. This paper specifically explores the nature of, reasons for, and evolution of intergroup interaction networks during the Paleoindian period in the East.

Research Foundations

Before continuing with this metaphor linking the present with the past, however, some chronological, terminological, and theoretical considerations are in order. In the discussion that follows, the Early Paleoindian subperiod is placed from about 11,500 to 10,900 or possibly as late as 10,800 years ago (B.P.)—these dates are, as we shall see, a very important part of the story that follows. Early Paleoindian components are identified by classic Clovis fluted lanceolate projectile points. The Middle Paleoindian dates from ca. 10,900 to 10,500 B.P., and is characterized, at least in the southern part of the region, by smaller fluted points and by fluted or unfluted points with broad blades and constricted haft elements like the Suwannee, Simpson, Cumberland, and Quad types. The Late Paleoindian dates from about 10,500 to 10,000 B.P., and in the Southeast is characterized by Dalton, Hardaway, and, by the middle of this period (if the dates from Dust Cave and Page-Ladson hold up), side-notched Taylor, Big Sandy, or Bolen points. In the Northeast and upper Midwest, in contrast, smaller lanceolate fluted-to-weakly-fluted base point forms and, in some cases, deeply indented base point forms were present in the Middle Paleoindian subperiod, and these forms appear to have continued into the Late Paleoindian subperiod in many areas. This chronology is admittedly poorly grounded at the present, and considerable overlap of point forms, particularly between the Middle and Late Paleoindian subperiods, is likely (see in particular Anderson 1990a; Dincauze 1993a; Driskell 1992; Goodyear 1982; Gardner and Verrey 1979; Levine 1990; and Meltzer 1988 for discussions of eastern Paleoindian morpho-chronometrics). For reasons intimately linked to how interaction networks appeared and evolved, however, I do not believe classic Clovis forms continued in use much past 10,800 B.P. anywhere in the region.

As I have argued in previous papers, I believe the Early Paleoindian subperiod is equated with populations that explored and colonized the region or—as far as I am willing to go at present to acknowledge pre-Clovis sentiments—with the rapid growth and expansion of a small and thinly spread basement or founding population caused by selective advantages conferred by the adoption of Clovis technology (Anderson 1990a, 1991, 1992). While a pattern of continuous movement by groups targeting megafauna—Kelly and Todd's (1988) high-technology foraging adaptation—may have characterized some of these Early Paleoindian groups, I suspect that when resource-rich areas were encountered, they were occupied for extended periods, and in some cases settled permanently, becoming what I have elsewhere called staging areas. That is, I believe that even during the period of initial colonization, mobility patterns were shifting rapidly from exploring/free wandering (perhaps the pattern of the very earliest groups) to more or less predictable patterns of movement or range mobility within specific (albeit quite large) habitual-use areas. The tremendous numbers of fluted points that have been documented along the major rivers of the midcontinent, specifically along portions of the Ohio, Cumberland, and Tennessee rivers, and in the central Mississippi valley, indicate a decided preference for these areas by Early Paleoindian populations and I believe reflect, at least in part, the use of these locations as staging areas (figure 1.1). It was from these initial and centrally placed population concentrations that the exploration and settlement of the remainder of the region proceeded, with additional staging areas established in the upper Midwest, the Northeast, and along the Atlantic Slope (see Anderson 1990a for an extended discussion of this process across the eastern half of the continent and Dincauze 1993b for a focused examination of the role of large sites in the colonization and use of the Northeast).

The rapid emergence of the subregional traditions that are a hallmark of the Middle Paleoindian and later periods, I have argued, was a direct consequence of the initial populations quickly adopting bounded habitual-use areas or settlement ranges. The adoption of habitual-use areas and resulting decreased mobility that began during the Early Paleoindian subperiod, it must be emphasized, was not brought about by population growth and resulting pressure or constraints on subsistence resources (i.e., shaped by carrying capacity). In the absence of any compelling evidence for population pressure at this early time level, in fact, such arguments are completely untenable (see also Anderson 1992:32–35, 45; Isaac 1992:443). Instead, I believe Paleoindian groups distributed themselves over the landscape in such a way as to meet cultural perceptions of appropriate group size, range, spacing, and frequency of interaction, as well as to meet biological needs, specifically the maintenance of viable mating networks and the avoidance of redundant land use that potentially could lead to the localized depression or exhaustion of critical subsistence resources. This is not to downplay the effects of the marked changes in the occurrence and distribution of biota (including the extinction of megafauna and the distributions of modern species) that were also occurring at

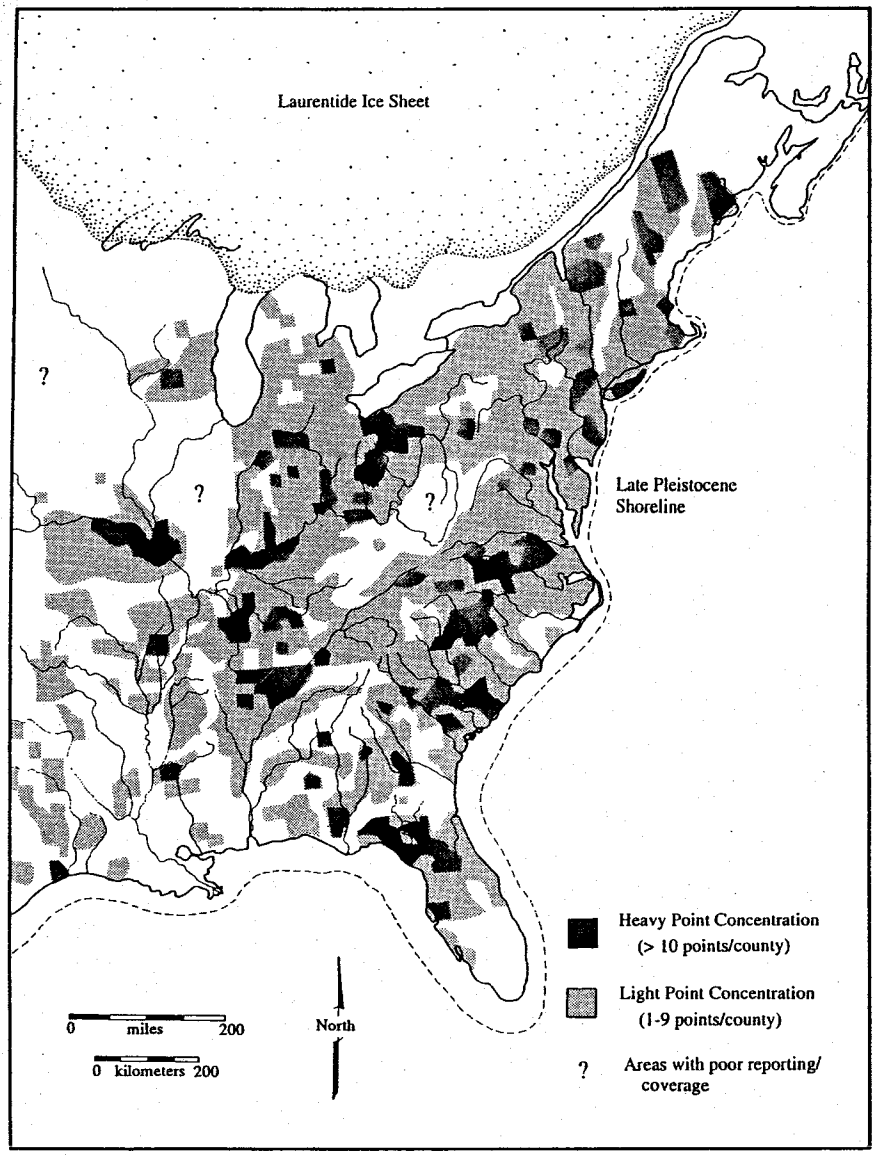

Figure 1.1. Early/Middle Paleoindian artifact concentrations in eastern North America.

the end of the Pleistocene; as we shall see, these too played a role in shaping Paleoindian settlement and interaction.

The evolution of interaction behavior during the Paleoindian period, in this view, took place in part to alleviate the tensions being generated by increased contacts between groups that were occurring during this period, changes affecting small cultural systems traditionally accustomed to considerable social isolation. Very real benefits, it must be emphasized, accrued as a

result of these changes in interaction behavior. First, and perhaps most important, the at least occasional interaction of individuals from differing groups was absolutely critical to ensuring viable mating networks and, hence, critical to the survival of regional populations (see below). Increasingly structured interaction, routinizing the exchange of goods and information between groups, would have also led to increased social ties across the landscape, facilitating risk-minimization behavior and offering groups options in the event of disaster (i.e., by reducing the likelihood of redundant land use and by providing populations in one area the opportunity and mechanisms for moving in with groups in other areas in the event of catastrophic subsistence resource crashes).

Changes in group mobility strategies over the course of the Paleoindian era were thus closely linked to changes in intergroup interaction, and, furthermore, these patterns of interaction and mobility were profoundly interrelated and evolved together through time. The Paleoindian era witnessed marked changes in the way people moved over the landscape, and it quite likely witnessed changes in the sheer numbers of people that were present. Interaction behavior during the Paleoindian period must, accordingly, be viewed from a dynamic framework, and not from a static or monolithic perspective. Table 1.1 summarizes the processes that I infer took place during this truly formative era, when the foundations of subsequent cultural traditions were laid down. I wish to now offer a few ideas on how and why these processes may have occurred.

Changing Patterns of Interaction during the Paleoindian Era

Why Did Interaction Occur?

As populations throughout the East settled into habitual-use areas during the Early and Middle Paleoindian subperiods, over time this process would have precluded the option of group movement into previously unoccupied areas. Continuation of a high-technology foraging adaptation would have been difficult, since groups employing it would increasingly encounter areas exploited by more settled populations. How much time was involved in this process? While we currently are unsure about when the initial appearance of Clovis technology occurred in the East, we are on better ground regarding its termination. Mead and Meltzer (1984) have argued that the late Pleistocene megafaunal extinctions were largely over by about 10,800 years ago, and it is about this time that subregional traditions are evident in the archaeological record, identified by the occurrence of (more or less) stylistically distinct and spatially restricted non-Clovis projectile point forms (figure 1.2). While radiocarbon-dated Clovis components are rare in the East, no dates later than

Table 1.1. Paleoindian Interaction Behavior in Eastern North America: Inferred Changes over Time

Subperiod/Diagnostics	Mobility Strategies	Interaction Strategies	Purpose of Interaction Behavior
Early Paleoindian (ca. 11,500–10,900 B.P.) Clovis (panregional) (typically large, parallel-sided lanceolates)	Initially: Continuous movement, exploring/free wandering (high-technology forager adaptation?) Very early: Settlement within staging areas (range mobility within very large habitual-use areas) Exploitation of high-quality stone sources predominant in tool manufacture	Fortuitous meetings between groups? Loosely scheduled meetings between bands in staging areas (probably between no more than two band-sized groups) Meetings held at known quarries or other prominent features Food resource availability may not greatly constrain interaction (due to the low numbers of people involved)	Provide opportunity for mate and information exchange Provide safe haven for groups radiating out from staging areas and simultaneously facilitate mating network formation Toolkit replenishment closely tied to interaction requirements Avoidance of redundant land use within the larger region
Middle Paleoindian (ca. 10,900–10,500 B.P.) South: weakly fluted points; unfluted broad blade forms (e.g., Cumberland, Quad, Simpson, Suwannee) North: fluted points with deeply indented bases (e.g., Vail, Debert variants)	First recognizable subregional cultural traditions (geographically extensive mobility within vaguely defined territories) Group ranges become centered about major physiographic features, resource-rich areas, and stone quarries Use of high-quality stone sources in tool manufacture predominant	Emergence of macroband interaction networks characterized by the regularly scheduled meetings between two or more bands Interaction common between as well as within subregional culture areas (interaction between subregional culture areas greatest in intervening areas; interaction within subregional culture areas was greatest at centers)	Ensure the operation of predictable/reliable mating and information networks Facilitate group relocation into different regions during periods of major resource stress Facilitate physical separation of groups to avoid redundant land use Toolkit replenishment closely tied to interaction requirements Avoidance of redundant land use within and between macrobands
Late Paleoindian (ca. 10,500–10,000 B.P.) South (early): Dalton South (late): various side-notched types (e.g., Taylor, Bolen, Big Sandy) North (early): fluted points with deeply indented bases North (late): Dalton points, weakly fluted points	Adoption of more or less fixed territories (annual ranges decrease over time) Increasing social/biological isolation of local populations Use of locally available or lower-quality stone in tool manufacture predominant	Meetings continue to be held at known quarries or other prominent landscape features Meetings begin to be tied to seasons and areas of food resource abundance (capable of supporting multiband population aggregates) Macroband interaction networks present over the region, with regularly scheduled meetings between constituent bands within given areas (up to several bands may meet at a time) Territorial central foci for local populations become well defined Interaction increasingly uncommon between groups in differing subregional culture areas Meetings tied to specific, possibly limited (seasonal?) periods of food resource abundance, ideally in areas with prominent landscape features	Ensure predictable mating network operation Facilitate physical separation of groups to avoid redundant land use Facilitate possible multiband-level solidarity/group identity? Toolkit replenishment not closely linked to interaction requirements Avoidance of redundant land use within macroband ranges

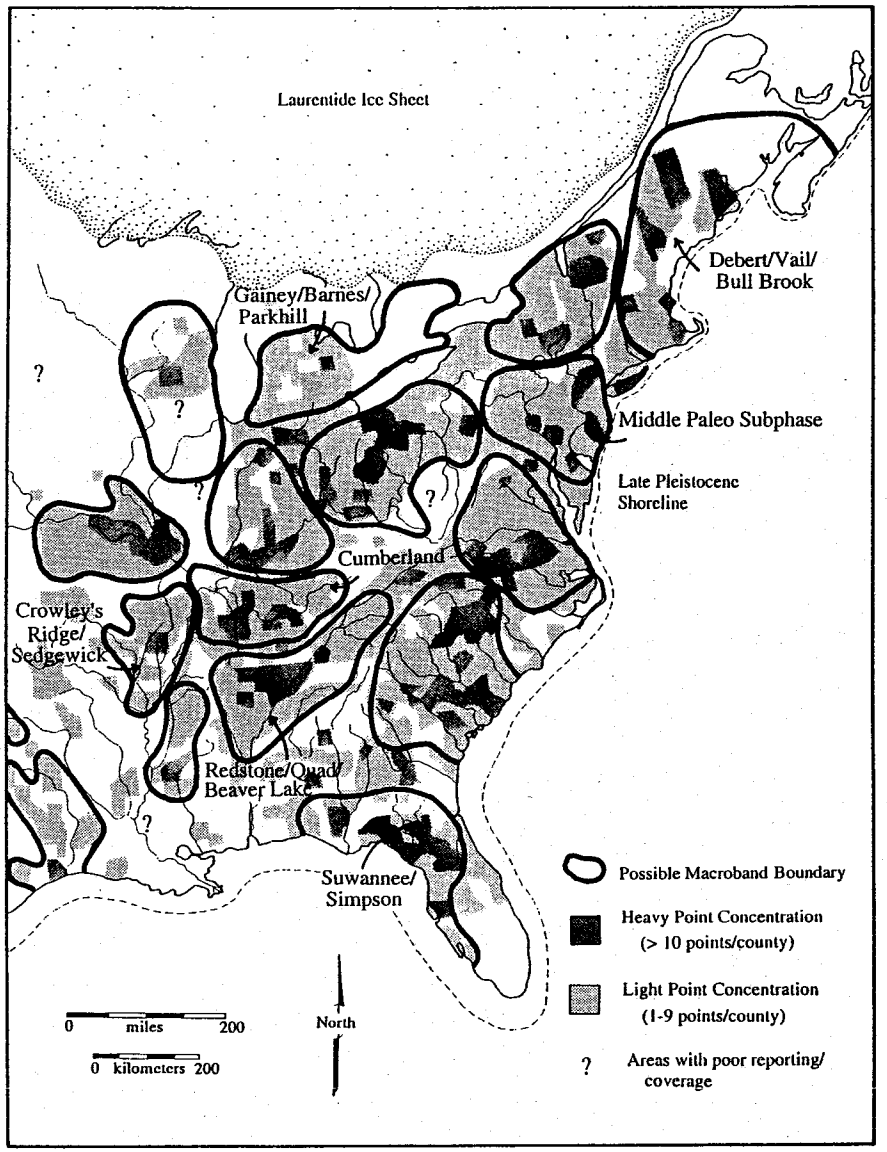

Figure 1.2. Hypothesized Middle Paleoindian cultural areas in eastern North America, based on the distributions of Early and Middle Paleoindian diagnostic projectile points.

ca. 10,500 years B.P. are currently accepted, putting an upper limit on the adaptation.

The disappearance of key target megafauna would have compromised the Early Paleoindian high-technology forager adaptation, which was simultaneously stressed by the increasing presence of human populations occupying more or less fixed ranges across larger and larger percentages of the landscape. Where one band-level entity may have been initially present in a given subregion or area, over time there were two, and then several. Evidence for population growth within the Paleoindian period has been suggested in a number of areas of the Southeast, where there is typically a doubling or more in the numbers of sites or diagnostics between Early, Middle, and Late Paleoindian subperiods (Anderson 1990a). Population growth would have led, over time, to group fissioning, range restriction, and the adoption of new resources, the hallmarks of the Middle and particularly the Late Paleoindian subperiods across the region (e.g., Anderson et al. 1992; Meltzer and Smith 1986; Morse 1975; Morse and Morse 1983).

As mobility lessened and group ranges became more fixed over the course of the late Pleistocene, how interaction occurred would have likewise had to change. During the Early Paleoindian subperiod, for example, population densities were extremely low, mobility was quite high, and, except in a few favored areas, most groups were only tenuously or ephemerally tied to specific locations. Band-level population aggregates are assumed to have been the primary social unit, although even this remains uncertain. While some groups appear to have settled resource-rich areas, others did not, preferring to move onward into unoccupied areas. Even those groups settling into staging areas still practiced extensive range mobility and were only loosely tethered to specific settings; these first habitual-use areas, the distributional data indicate, were defined by major drainages, rich or diverse subsistence resources, and quarry sources.

Given such extensive and seemingly unfocused settlement mobility, could structured intergroup interaction have even occurred at all during the Early Paleoindian subperiod? It has been variously suggested or implied, for example, that interaction during this time may have been fortuitous, the chance meeting of two or more band-sized groups. Such a perspective places little importance or value on interaction. In contrast, I believe that loosely scheduled meetings between differing groups were essential to the long-term survival of human populations in the East. Demographic pressure, specifically the need to find a mate of a suitable age, sex, and kinship distance, would have been a particularly compelling force prompting intergroup interaction. Quite simply, in small, band-level groups, the likelihood that suitable mates would have been available for everyone is statistically remote. Mechanisms minimally facilitating the occasional meeting of groups, however, would have helped overcome problems and tensions created by unbalanced sex ratios. As Wobst (1974, 1975, 1976) demonstrated in a computer simulation of these processes, at least occasional interaction between ca. 175 to 475 people—what he called a minimum equilibrium network—would have been necessary if Paleoindian populations were to maintain their existence over time. Interaction networks thus had to have appeared very early in the East, and the way these networks formed and operated likely shaped the colonization process

itself as well as the subsequent development of subregional cultural traditions.

Interaction would also have been an effective risk-minimization strategy. Early Paleoindian groups that ran into problems, such as the accidental loss of one or a few key individuals, or that faced famine due to localized crashes in game populations, could have literally died out if mechanisms were not in place that permitted them to locate and join with other groups. Interaction and information exchange, even in the absence of occasional catastrophes, furthermore, would facilitate the monitoring of resource variability on a large (regional or subregional) scale, permitting the efficient movement of groups into resource-rich areas, rather than into areas recently exploited by another group and hence probably characterized by depressed subsistence resources. Finally, large-scale interaction networks spanning markedly different environmental zones, which permit fluid group movement during times of stress, have been documented among the Inuit (Minc and Smith 1989), and similar strategies have been postulated among Paleoindian groups in the East.

In particular, Johnson (1991, 1992) has suggested that contacts between Northeastern and Middle Atlantic Paleoindian groups—something implied by the occasional presence of deeply indented Middle Paleoindian Vail/Debert-like points in the Middle Atlantic area—reflect the movement of tundra hunters into the woodlands in response to subsistence resource shortfalls, such as might be brought on by caribou or marine mammal crashes. A similar situation may exist in the upper Midwest, where interaction between presumed caribou-hunting groups in the Great Lakes area and more generalized foraging groups in the woodlands to the south along the Ohio River Valley may have occurred, given the broad if minimal overlap of point forms between these two areas (see also Lepper and Meltzer 1991; Shott 1986). Similar patterns are noted in other parts of the continent that may reflect comparable risk-minimization–based interaction behavior. The occurrence of classic Plains Paleoindian points has been noted from a number of locations in or near the Mississippi River valley (e.g., Chapman 1975; Morse and Morse 1983; Munson 1990), for example, and a similar overlap of Eastern and Plains Paleoindian materials is documented in Oklahoma, near the eastern margin of the Great Plains (Wyckoff and Bartlett, chapter 2).

A major reason Paleoindian points often turn up far from their presumed loci of manufacture (i.e., well away from quarry areas) throughout the East (e.g., Goodyear 1979; Tankersley 1989, 1990, 1991), therefore, is because geographically extensive mobility was essential to the maintenance of interaction networks, and these networks were an important if not critical facet of existence. Parenthetically, the fact that many of these early assemblages are made on exceptionally high-quality stone has attracted considerable attention among researchers, much of it directed to documenting the technological advantages of such material. While the use of high-quality stone would have *facilitated* long-distance movement by ensuring predictable and reliable

tool manufacture and use (undoubtedly a critical concern for populations presumably ranging far from known stone sources, as defined by Goodyear 1979), the *reason* for such movement was, at least in part, to ensure occasional meetings with other groups. *Social factors (i.e., the need for interaction), therefore, were likely at least as important as lithic determinism (i.e., the need to periodically visit high-quality stone sources) in shaping the early history of human occupation in the East.*

Where Did Interaction Occur?

By developing mechanisms promoting interaction, Early Paleoindian groups across the East collectively would have been able to overcome demographic and resource pressures that likely would have decimated them if they were operating independently. For such interaction to work, however, these people had to know when and where to meet one another, no small trick given the millions of square kilometers of terrain involved. While it has been suggested that Early Paleoindian populations wandered seemingly unrestrained over the landscape with little sense of place (e.g., Kelly and Todd 1988), there is appreciable evidence to suggest the contrary, that these peoples were superbly aware of major features of the regional landscape. Distributional analyses of fluted-point occurrence, for example, indicate these artifacts are found near prominent physiographic features, high-quality chert outcrops, and along relatively small stretches of some of the region's largest drainages (Anderson 1990a; Brennan 1982; Dincauze 1993a; Gardner 1974; Goodyear 1979; Mason 1962; Meltzer 1988; Williams and Stoltman 1965). As I have suggested previously, unusually dense concentrations of these artifacts likely represented staging areas occupied more or less permanently, the locations from which the settlement of the larger region proceeded. Such areas would have also been ideally suited for aggregation events.

I suggest that Early Paleoindian interaction networks first developed, in part, from the widespread awareness that people would have been present within these so-called staging areas. Groups exploring or colonizing beyond these areas would have had the knowledge that, if they got into trouble or wanted or needed additional human companionship, there were places on the landscape where they would have a high probability of finding other people. Groups residing within these areas (as well as those settling into new areas) likely facilitated such rendezvous by scheduling visits to critical areas, such as chert quarries, or to prominent physiographic features, and then making sure that other groups had a general awareness of this schedule. This does not mean that interaction would have been easy or even regular. Given the vast areas involved, in fact, regular interaction would have been unlikely. Knowing approximately when and where other groups could be found one or more times a year, however, probably would have been information perceived as extremely valuable by these early populations, and hence likely to

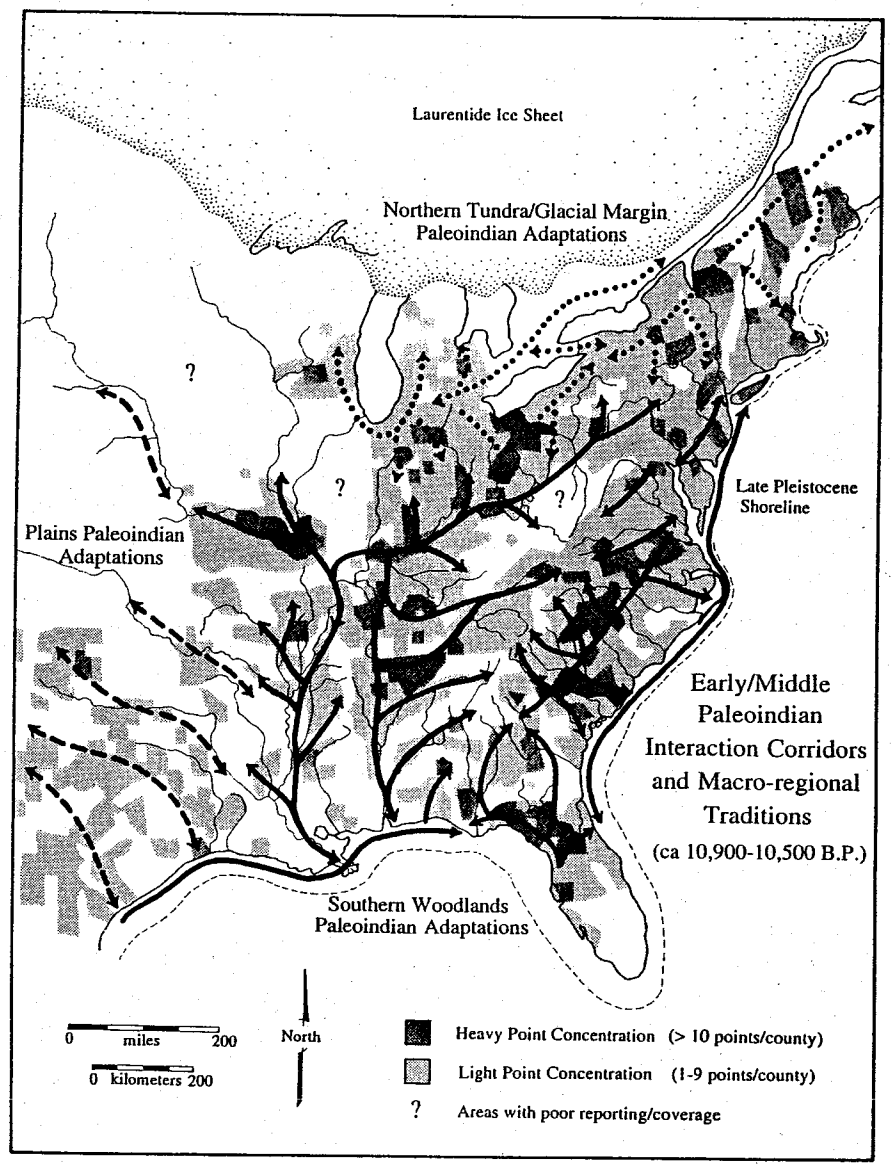

Figure 1.3. Interaction corridors during the Early and Middle Paleoindian subperiods in eastern North America.

be transmitted as widely as possible. Paleoindian land use and mobility was thus organized, in part, to facilitate interaction, and this critical process was not left solely to chance.

Inferred avenues or corridors along which group movement and interaction could have occurred between different staging areas or subregional traditions in eastern North America are illustrated in figure 1.3. In the interior of the East, these communication arteries are inferred, in part, from the occurrence of Early and Middle Paleoindian diagnostics and their relation to major physiographic features (i.e., river valleys and mountain ranges). While major patterns of movement and interaction are also suggested along the outer Gulf and Atlantic coastal plains, on now-submerged portions of the continental shelf, archaeological evidence to support such an assumption is almost nonexistent (e.g., Bonnichsen 1991:322; Dunbar et al. 1991). In the southern woodlands, interaction is assumed to have occurred along the major river systems and their larger tributaries and along the outer Atlantic and Gulf coastal plains. Interaction along major river systems also appears to have linked the eastern Great Plains and the southern woodlands (cf. Wyckoff and Bartlett, chapter 2), as clusters of fluted points have been observed along portions of the Missouri, Arkansas, Red, and (in Texas) the Sabine, Trinity, Brazos, and Colorado rivers. In the northern tundra areas, in contrast, interaction appears to have occurred primarily along corridors defined by Great Lake and inland sea shorelines and the ice sheet margins themselves; some communication along river lines also likely took place (i.e., along the Connecticut or Hudson in the Northeast and along the rivers draining the upper Midwest).

To return to my earlier metaphor, just as archaeologists' regional meetings are held in places capable of supporting large numbers of people and at communications hubs that they can travel to and from readily, so too were probable Paleoindian aggregation events. Such interaction is often indicated at sites found associated with dramatic or prominent points on the landscape, at places such as Eagle Hill, Louisiana, located at the headwaters of three major drainages; at Stone Mountain, Georgia, a promontory that can be seen for tens of miles away; at Fall Line settings across the region at the boundary between the Coastal Plain and Piedmont physiographic provinces, where rocks first or last appear in the river, depending on which way one is traveling; at or near the confluences of major drainages, such as the Ohio and Cumberland; and at truly unusual and hence memorable settings on the landscape, including Wells Creek Crater in Tennessee, Barnett Shoals in Georgia, or Muscle Shoals, Alabama (e.g., Anderson et al. 1988:60; Dragoo 1973, Gunn and Brown 1982; Michie 1992; O'Steen et al. 1986; Tankersley 1985, 1989). Parenthetically, the fact that many of these settings are along or near major drainages suggests that some form of water transport may have been used, an inference that, while speculative, should not be discounted (Engelbrecht and Seyfort 1994). Meetings might be timed to coincide with periods of resource abundance, such as when fish were running or birds migrating, or else be tied to simple astronomical or calendrical observations, such as full or new moons following first or last freezes.

Over time, the process of interaction would have changed (table 1.1). With the emergence of groups permanently residing within fixed territories or,

more properly, within habitual-use areas—a process that I have argued was complete over most of the East by the close of the Middle Paleoindian subperiod if not before—the locations or group ranges of peoples over the landscape would have become much more predictable than previously. As subregional traditions emerged and the numbers of bands grew during the Middle Paleoindian subperiod, planned meetings or aggregation events likely became more diversified in type and character, as well as becoming more formally structured and scheduled. Interaction networks would have developed between the bands residing *within* a given area or subregional tradition, while at the same time the mechanisms promoting interaction *between* the peoples of differing subregional traditions that first appeared during the Early Paleoindian era continued. These mechanisms themselves evolved to accommodate the larger regional population levels and the greater certainty about group locations.

A number of distinct subregional (macroband-level) settlement systems, reflecting interaction between a number of bands, are assumed to have begun emerging by the Middle Paleoindian subperiod, and such systems were no doubt firmly in place all across the region by the Late Paleoindian subperiod. The operation of one such band-macroband settlement system has been described in the South Appalachian area, based on work with Early Archaic assemblages from in and near the Savannah River basin (Anderson and Hanson 1988). By the Early Archaic subperiod band-level groups appear to have ranged primarily within individual drainage basins; earlier band ranges, even during the immediately preceding Late Paleoindian subperiod, may have extended over appreciably larger areas. While this seems likely for the Early and Middle Paleoindian subperiods, evidence on group range is equivocal for the Late Paleoindian. Some suggestions that Late Paleoindian groups were riverine-oriented come from site distributional studies conducted in Piedmont Georgia (O'Steen et al. 1986). Similar evidence also exists to suggest that Late Paleoindian Dalton populations in northeastern Arkansas employed group ranges oriented along individual drainages and centered on base camp and cemetery areas (e.g., Morse 1975, 1977; Morse and Morse 1983; cf. Wyckoff and Bartlett, chapter 2); whether comparable settlement patterns occurred anywhere else in the region is unknown. The density of Dalton remains and the complexity of site types and assemblages found in northeast Arkansas is marked, however, and may be unique within the region.

Unfortunately, information about regional population distributions and interaction behavior during the Late Paleoindian subperiod in the East is very poorly documented at the present. Aside from atypical areas where sites of this period have been the focus of appreciable research (i.e., such as in northeast Arkansas or Piedmont Georgia), our understanding of Late Paleoindian artifact and site occurrence is poorer than it is for the Early and Middle Paleoindian subperiods. This is almost entirely due to the fact that the appreciably larger numbers of Late Paleoindian diagnostics (i.e., Dalton and other points), when compared with the numbers of earlier (i.e., Early and Middle Paleoindian) points, have deterred artifact-recording projects. Quite simply, in most states and provinces, Late Paleoindian artifacts are not recorded because there are thought to be too many of them. Thus, while good quantitative evidence for the occurrence of Early and Middle Paleoindian diagnostics has been collected from across the East, no such information is available for the Late Paleoindian subperiod at present. As a result, ideas about where population concentrations were located during this period, and how these peoples may have interacted, are largely extrapolated from observations about earlier and later periods.

By the Middle Paleoindian period, two kinds of interaction networks are inferred to have been present in the East, those operating *within* and those operating *between* macroband cultural entities or subregional traditions. It is quite likely that a high degree of flexibility and fluidity characterized these cultural systems and, hence, the interaction networks at each scale. That is, there is no evidence to suggest that the subregional traditions or their constituent bands occupied rigidly maintained territories, or that they prevented the movement of individuals or families from one group to another. Instead, group ranges and hence social boundaries appear to have been shaped primarily by physiographic conditions, such as the locations of river drainages and mountain ranges, or where favored resources were concentrated. In those parts of the East where few marked physiographic barriers are present, such as along the Atlantic seaboard, for example, Middle and Late Paleoindian assemblages would be expected to exhibit clinal rather than steplike gradations (i.e., there should be considerable overlap of point forms rather than sharp discontinuities) if social boundaries were nonexistent, or at least not rigidly maintained. This appears to be the case, although this inference remains to be demonstrated quantitatively.

It is likely that interaction *within* subregional traditions, or macrobands, was greatest between those bands near the centers of these areas than among those at the peripheries. Centrally located rendezvous points would have facilitated interaction better than locations on the peripheries of the region. To return to our metaphor, attendance figures often skyrocket when national professional conferences are held in the middle of the country (e.g., St. Louis or Chicago) rather than at or near its margins (e.g., Miami or Portland). Likewise, settings with dense concentrations of prized or uncommon resources likely attracted and facilitated the interaction of larger numbers of people, something that explains the atypical attendance figures when meetings such as the Southeastern Archaeological Conference or the Society for American Archaeology are held in places like New Orleans. We would thus expect to find large sites with dense and diversified assemblages in settings at or near the centers of Middle and Late Paleoindian subregional traditions or

macrobands. These sites would evince evidence for the aggregation of individuals and groups primarily from within the macroband/subregional cultural entity, furthermore, and few materials from beyond this area. These kinds of assemblages—which may well reflect aggregation loci for macroband level social entities—are common in a number of areas of the Southeast, such as in many fall line settings, on prominent terraces or landforms seemingly centrally placed along drainages, or near major confluences (e.g., Anderson 1990a, Dincauze 1993a; Michie 1992; Morse 1975, 1977; O'Steen et al. 1986; Tankersley 1985; Williams and Stoltman 1965).

Interaction *between* subregional traditions, given the (presumably) relatively open or fluid nature of these cultural systems, is likely to have been most pronounced (and hence most identifiable archaeologically) at the margins or peripheries of these entities. Bands at the peripheries, in fact, likely had as much if not greater interaction with bands in other subregional traditions or macrobands, at least through the Middle Paleoindian subperiod. Maintaining ties with peoples at appreciable distances and in differing or distinctive environmental settings, as noted previously, would have facilitated temporary relocations if major subsistence shortfalls occurred, as might possibly happen during periods of prolonged drought, rainfall, or cold weather, or following crashes of game populations.

Aggregation loci at the interfaces of two or more subregional traditions are thus expected, at least during the later Paleoindian subperiods, in areas exhibiting dramatic visual features (permitting their identification and relocation), and having resources capable of supporting fairly large numbers of people. Aggregation assemblages in these areas, like those at the centers of macroband systems, would have also had dense and diversified assemblages. Unlike those sites, however, they would be expected to have highly diversified raw-material assemblages, reflecting the transport and discard of objects in use in the differing areas; care must be taken, of course, to attempt to resolve how these assemblages formed (Meltzer 1985, 1989; Shott 1989a, 1989b; Wilmsen and Roberts 1978). The Feronia locality in south Georgia, at the interface of the Gulf and Atlantic slope watersheds, appears to lie at one such physiographic boundary; this locality certainly exhibits a diverse Middle and Late Paleoindian and Early Archaic archaeological assemblage, both in terms of stylistic and raw material characteristics (Blanton and Snow 1986, 1989). Eagle Hill in Louisiana, at a divide between major tributaries of the Red, Sabine, and Calcasieu drainages, may be another such locality (Anderson et al. 1988:60; Gunn and Brown 1982:127).

One point must be emphasized, however, and that is that there is no evidence to indicate that large population aggregates, involving more than a few bands in close proximity to one another, likely ever formed during the Paleoindian era in the East. Interaction within and between macrobands—the two kinds of large-scale interaction posited for the Middle and Late Paleoindian era—likely involved fairly small numbers of people meeting for

short periods of time, primarily because extended occupations by large numbers of peoples would have in all probability depressed or exhausted available local resources.

To conclude this section, the subregional macroband-level mating and information exchange entities that emerged during the Paleoindian period in the East did so, I believe, not only to deal with demographic pressures brought on by population growth but also, increasingly, to avoid redundant land use. That is, while finding mates was an important mechanism driving intergroup interaction, as populations grew it also became important to disperse them effectively over the landscape. Thus, the intergroup interaction networks that were evolving in the East during the Paleoindian era not only brought people together, but also, over time, had the increasingly important role of keeping them apart.

Identifying Interaction Archaeologically

How are we to test and evaluate the ideas that have been proposed here? Some means have been suggested above, specifically in the discussion of the assemblage and locational characteristics of sites where interaction is inferred to have occurred during the various Paleoindian subperiods. Fortunately, the kinds of data needed to test these inferences are becoming increasingly accessible, thanks primarily to the long-term research efforts of dedicated scholars working throughout eastern North America, such as Broster and Norton (1992) in Tennessee, Johnson and McCary (Hranicky 1989; Johnson 1989) in Virginia, McGahey (1992, 1993) in Mississippi, and Futato, King, and Hubbert (1992) in Alabama (to name the individuals in charge of a few of the more recently initiated data-collection projects). As a result, a large primary database on Paleoindian sites and artifacts is being developed for eastern North America, and indeed for all of North America. Over the past three years, for example, thanks to the cooperation of a great many scholars from across the East, distributional information has been compiled on some 11,000 Paleoindian points, and attribute data on almost 6000 points; most of these materials date from the Early and Middle Paleoindian subperiods (Anderson 1990b, 1991; Faught et al. 1994). As this chapter and earlier papers have tried to demonstrate, having basic distributional information about the occurrence of Paleoindian materials over the region can inspire a wealth of ideas (and provide data useful to testing them) about how the colonization and settlement of the region may have occurred, how subregional cultural traditions emerged, and how interaction behavior evolved over time.

As primary data continue to be collected and drawn together, it will be possible for the first time to examine stylistic and technological variability in Paleoindian artifacts over large areas and with truly extensive data samples, an approach that in the years ahead will likely eclipse more traditional comparisons conducted between a few widely scattered sites or small numbers of

artifacts. Such large-scale comparative analyses will be critical if we are to move ahead in our understanding of these early occupations. A decade ago David Meltzer (1984), in his dissertation analysis, attempted to examine stylistic variability in eastern Paleoindian assemblages using attribute data from measured artifacts. His study, while revolutionary in concept and still a guide for present efforts, was limited by the small size and spatially restricted nature of the database he was able to compile, a few hundred points (N=323) covering the entire East, of which less than 50 represented the lower Southeast. We will soon be able to repeat this kind of analysis using assemblages orders of magnitude larger, and encompassing virtually the entire region.

Continued and indeed expanded data collection efforts, it must be emphasized, remain absolutely essential. As noted previously, most recording efforts to date have focused on Early and Middle Paleoindian artifacts (typically projectile point count or attribute measurements). Unfortunately, even basic count data about artifacts dating from the Late Paleoindian subperiod are lacking from many areas. Even where attribute data are being compiled, some of the measurements being recorded await interstate standardization to render them directly comparable. Thus, projectile point blade-width values (to use one example) may variously refer to maximum width, width one-third of the way up the blade, or width one-half of the way up the blade, depending on the survey employed. Greater precision in the identification of lithic raw materials is also needed, since accurate delimitation of source areas (when tied to the distribution of diagnostics away from these sources) can be used to examine mobility and interaction behavior (e.g., Tankersley 1991). Finally, recording efforts should move beyond dealing solely with projectile points to encompass assemblage and locational characteristics. Fortunately, as comparative analyses are initiated and proceed using the extant regional Paleoindian databases, greater recognition of these problems, and methods for their resolution, will be advanced.

A number of fundamental questions crucial to further our understanding of Paleoindian occupations in the East will be examined in the very near future using the Paleoindian data that are accumulating. Stylistic and technological variability within regional Paleoindian assemblages can be explored to determine the existence and extent of regional or subregional traditions, as well as the utility of existing taxa. A great many artifacts—spanning a wide range of sizes, shapes, and raw materials—have been called "Clovis" across the East, for example, but to date there have been few attempts (of which Meltzer's has been the most rigorous) to determine the range of variation subsumed under this label, and whether or not the type name is even appropriately applied. Comparable studies are needed for presumably later Paleoindian forms as well. What, for example, is the regional distribution and range of morphological/stylistic variation of the Cumberland, Dalton, Redstone, Suwannee, or Simpson types? Are other currently unrecognized

stylistic clusters evident? Are our current types useful analytical tools, or do they (as I suspect for many Paleoindian types, and particularly for the "Clovis" taxa itself) subsume so much variability as to effectively confound our understanding? Do discrete subregional types or variants exist and, if so, what can such clusters tell us about settlement patterns, population levels, mobility strategies, technological organization, and interaction behavior?

The way we think about early human populations in the East has changed significantly in recent years. We are coming to realize that the Paleoindian era witnessed dynamic changes in the social as well as the physical environment, and that our research, to prove effective, must acknowledge these changes. Major changes in population, mobility, and interaction occurred over the course of this period. Population appears to have grown markedly, group ranges became bounded and appear to have decreased appreciably, and intergroup as well as intragroup interaction became more regular and presumably more formalized, encompassing larger population aggregates. A behavioral gulf differentiates the region's Early and Late Paleoindian populations, even though less than a millennium separates these subperiods.

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