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The Archaeology of Frontiers and Boundaries

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Surplus Flow between Frontiers and Homelands

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INTRODUCTION

This essay models frontier–homeland relations in stratified societies. Descriptive and analytic models are presented along with a case study demonstrating the usefulness of these perspectives. The models are designed to elucidate three characteristics of frontiers in stratified societies, namely, their large spatial scale, the systemic quality of interactions, and the role of the production and distribution of social surplus. The case study is drawn from historical-period New England.

In addition to adaptations to local ecological situations, cultural variability is also a function of interactions over large areas (e.g., Adams 1975). Though diffusion is almost synonymous with large-scale interactions in the anthropological literature, recent work makes it clear that a number of other relations have significant spatial dimensions. For instance, working with the insights of Barth (1969), a number of archaeologists have investigated the subdivision of areas along ethnic lines (e.g., Hodder 1979; Plog 1980; Wobst 1977). The spatial dimensions of ethnic processes have been joined to the study of political–economic relations by Cole and Wolf (1974). Finally, the large, spatial scale of production and distribution has been studied for the modern world (Amin 1980; Frank 1978; Wallerstein 1974, 1980; Wolf 1982), the Islamic World (Boone and Redman 1980;

Thorbahn 1979), Mesopotamian civilization (Kohl 1978; Lamberg-Karlovsky 1975; Schneider 1977; Tosi 1977), and Mesoamerica (Blanton *et al.* 1981; McGuire 1980), among other areas (Friedman and Rowlands 1978).

Considering spatial processes of surplus production and distribution, or ethnicity, significantly alters the role of space in theories of cultural variability. Under the diffusionist paradigm, similarities are due to diffusion, and by implication, direct or indirect culture contact; differences are in part the result of a lack of contact. Concern with the spatial processes of surplus production and distribution, or ethnicity, indicates something different; namely, that culture contact regularly creates differences. When contact creates differences, standard measures of interaction are inappropriate. For instance, the volume of similar material in two areas may be a poor indicator of the degree of contact (preservation issues aside), and the lack of similar assemblages and architecture cannot be taken, on its own, to indicate isolation. Thus, many culture histories based on presumed isolation require reinterpretation in light of these new approaches to large-scale spatial process.

Reinterpretation is not hampered by a lack of methodology. Considerable advancement has been made in analyzing artifact assemblages for indications of long distance exchange (e.g., Hodder and Orton 1976; Pires-Ferreira 1975; Renfrew 1969, 1975, 1977). Analyses of regional settlement patterns provide clues to the scale and nature of political-economic interactions (e.g., Blanton 1976; Johnson 1977; Paynter 1982). However, these methods, with some notable exceptions (Pires-Ferreira and Flannery 1976; Johnson 1980), are open to Johnson's criticism of sterile formalism (1977:500–501). Coming to grips with long distance processes is, therefore, less a problem in method and more a problem in theory.

A place to begin such theory building is with frontier studies. Frontiers obviously involve large-scale spatial relations and the behavior on frontiers has been addressed from different theoretical positions. A frontier implies at least three cultural forms: the frontier, the homeland, and the aboriginal culture impacted by the expanding homeland culture. Different approaches to spatial process account for these differences in a number of ways. For instance, under the *diffusionist approach*, the variability is due to differential diffusion of homeland traits to the frontier and virtually no diffusion to the aboriginal area. With time comes increasing similarity. The *surplus production and distribution approach* accounts for the frontier and many aspects of the aboriginal culture as responses to the movement of surpluses toward the homeland. Time alone is not likely to alter the distribution of traits and, in fact, is as likely to intensify the differences. Finally, an *ethnicity approach* identifies the frontier zone as an area of competition and differentiation, again relations that do not necessarily tend toward cultural homogeneity.

This study contributes to understanding frontier-homeland relations with a political-economic approach, and focuses on models involving the production and distribution of surplus. The first section presents descriptive models of supraregional change, distinguishing between clinal and modular landscapes, and between clinal and clonal developmental trajectories. The problem of accounting for these landscapes and trajectories is initially taken up in the second section where an analytic framework of the key structural positions in frontier development is introduced. The third section introduces notions of domination and resistance as principles integrating the various actors found in frontiers—principles that allow a different understanding of why specific frontiers follow specific developmental trajectories. The utility of these frameworks for studying an empirical situation is the subject of the fourth section, where some problems in the development of historical-period New England are considered. Refining the frameworks presented and using them to analyze other situations of frontier development would give a political-economic appreciation of frontiers and such ethnological questions as, what kinds of societies regularly create frontiers?; under what conditions do frontiers rise up and come to dominate the homeland?; and, under what conditions does a frontier status persist? These are clearly key issues in the development of contemporary stratified societies, and they represent poorly understood aspects of societies of the past. Elucidating them is worth our attention.

DESCRIPTIVE MODELS OF FRONTIER DEVELOPMENT

Hudson (1977:12) points out that a *frontier* “in spatial terms . . . [is] a fringe or an outer boundary.” An edge must have a center; thus, a descriptive model of a frontier implies the existence of a homeland (a center). Abstractly it is possible to consider the frontier and the homeland as two distinct subregions within a culture area. However, empirically, on the ground, there is no line in space where the homeland ends and the frontier begins. Describing these interregional relations, then, involves supraregional models of continuous distributions over the larger culture area. This section considers the nature of some descriptive models of these large-scale distributions.

Frontier-homeland supraregional models are a special case of models involving all sorts of interregional interactions. Other models might invoke long distance trade, political domination by indirect rule, or the diffusion of esoteric information from one culture to another. Frontier-homeland relations however, suggest the total displacement of one way of life by a part of a different way of life. Thus, frontier-homeland relations have a distinctive

synchronic character—the frontier as part of a larger more complex cultural whole; and, a distinctive diachronic character—the frontier as an experiment that will either fail or develop into a full culture.

A number of variables have been used to compare the frontier and the homeland. For instance, some approaches characterize the frontier as being somewhat less than the homeland. Variables for this comparison include population density (Hudson 1969), surplus accumulation (Frank 1978; Wallerstein 1974, 1980), richness and complexity of culture (Hartz 1964), and, for lack of a better word, cultural inertia (Service 1960). Alternatively, other descriptive comparisons stress that the frontier is somewhat more than the homeland. For some, frontiers are seen as being more innovative (Service 1960; Giddens 1973), more resource abundant (Green 1979), or more culturally diverse (Miller and Savage 1977).

Supraregional descriptive models can be made by mapping the distribution of these variables over space. For instance, imagine standing in the homeland of a landscape defined by population density. As one travels outward, toward the frontier, population density declines. This landscape, physically, resembles an inverted bowl, and this is a general description of landscapes on which frontiers are considered somewhat less than the homelands. Alternatively, if the variable describing the landscape is more frequent on frontiers, then the supraregional landscape resembles a bowl set right side up. In the following, these synchronic supraregional landscapes are referred to as *clinal landscapes*.

Clinal landscapes, as a general model, can be contrasted to *modular landscapes*, a class of large-scale landscapes that do not incorporate frontier-homeland relations. On a modular landscape the distribution of the variable moves through peaks and troughs. A three-dimensional physical model of this landscape is a table of bowls rather than a single bowl. Each bowl represents a relatively autonomous culture area with the centers of equal value, although possibly of differing quality.

Both clinal and modular landscapes have been studied, empirically and theoretically. Most notably, the supraregional clinal distribution of trade items (such as obsidian) has received the attention of Renfrew (1975, 1977), Hodder and Orton (1976), and Pires-Ferreira (1975). Different behavioral conditions, such as simple distance effects, directional trade, central-place trade, random-walk models, and so on, effect the shape of the curve describing the distribution (see also Earle and Ericson 1977). On the other hand, size and areal characteristics of modular landscapes have been investigated by Renfrew (1975) particularly in his study of early state modules.

Frontier-homeland landscapes are clinal landscapes on which the differences are due to the frontier being only a recently created part of a larger culture. This suggests a developmental question: how might these relations

between frontiers and homelands change over time? Given synchronic models of clinal and modular landscapes, three diachronic trajectories come to mind: clonal trajectories and two versions of clinal trajectories.

1. The first is one in which a clinal landscape develops into a modular landscape. Given that the initial clinal landscape is a frontier-homeland situation, the development of the modular landscape represents a process of cloning of the homeland culture, a developmental trajectory referred to as *clonal*. Numerous examples of clonal developmental trajectories can be found in the archaeological literature (e.g., Binford 1968; Wobst 1974). Deetz's (1977) discussion of historical New England exemplifies clonal trajectories in stratified societies. He posits three stages of historical New England culture change: a yeoman English culture stage (1620–1660), a folk culture stage (1660–1760), and a period of reintegration into European culture and development of a North American mass culture (from 1760 to the nineteenth century). Changes in the form and composition of New England material culture—including architecture, mortuary art, and ceramic assemblages—coincide with and are due to this sequence of cultural phases.

The initial period consists of the partial culture of the English yeoman farmer exhibiting English architectural styles, Puritan mortuary themes, and a dairy ceramic assemblage. With relative isolation from Britain, independent variations on this English culture develop into the regional folk cultures of the second period. Through time, as population grows, New England develops an elite, and the elite reestablishes contact with Britain, principally through the education of its children. Symmetrical architectural styles, secular mortuary art, and individualized table services diffuse into the colonies associated with the Renaissance based Georgian mind-set.

If the data were systematically collected and mapped, supraregional maps of the New England-England landscape for each of these stages would disclose a clonal developmental trajectory. Imagine the maps describing population density and an index of cultural complexity. During the first stage the cline from the homeland to the New England frontier would follow a precipitous drop for both these variables. A map of the second stage would disclose less of a difference between the two areas. By the third stage New England would begin to take on values similar to those of England. Similar maps would result on landscapes defined by density of elite architecture, assemblages of table services, or mortuary art distributions. (These maps, of course, take the North Atlantic into consideration.)

2. An alternative developmental trajectory maintains a clinal landscape over time, with clinal landscapes developing into clinal landscapes. Two logical versions are (1) the case of no spatial movement of the cline, and (2) the case in which the cline relocates itself in space. The former is an instance

in which the synchronic clinal relations perpetuate themselves in their same locations within the supraregional area. In the latter, the relations break down and often reverse their effect, resulting in a movement of the cline in space.

Examples of relatively stationary clinal landscapes include relations between the Mesopotamian heartland and the Iranian plateau, the valley of Mexico and Kaminaljuya, and between Europe and Africa during much of the modern period. Discovering such landscapes raises the issue of why they persist—an issue often forgotten in attempts to account for the rise and fall of cultures.

3. In the other version of the clinal developmental trajectory, the cline moves through space. Examples of this are found in Wallerstein's (1974, 1980) descriptions of modern world system development. For instance, Wallerstein sees the core of the European world system shifting in space from the Iberian Peninsula to northwest Europe and then to North America. With the shift of the core from one area to another, there is a concomitant decline of the old core into semiperipheral status. During the fifteenth and sixteenth centuries, the core was located in Spain and Portugal. During the seventeenth century the Netherlands became, for a time, the new core. Britain attained this status at the expense of both the Netherlands and France by the middle of the eighteenth century. The core moved again to the United States, at the expense of Europe, after World War II (Wallerstein 1974, 1980).

The New England–Europe landscape takes on a different character when placed in this world systems perspective. Wallerstein's landscapes are described in terms of the density of social surplus accumulation, strength of state apparatus, mode of labor mobilization, and source of ideology and finance. Over time, the distribution of these variables changes, with New England rising from the position of a semiperiphery (Wallerstein 1980:236–237) to that of a core, while England declines from core status to that of a semiperiphery. The clinal relation remains, though it changes in space. This contrasts with Deetz's clonal trajectory, describing very different landscapes.

Considering frontier change with models of supraregional development raises a number of points. For one, these trajectories raise interesting problems in ethnology. For instance, are different kinds of supraregional landscapes characteristic of different types of stratified societies? Similarly, do different types of stratified societies develop along specific trajectories? Paying attention to the nature of synchronic landscapes and their diachronic developments should provide insight into underlying cultural process.

A drawback to using these large-scale models is operationalizing them. The collection of data to construct, for instance, New England–England

landscapes presents many practical problems. There are obvious problems involving data collection at reasonable levels of resolution for variables such as mortuary style distribution, or cultural complexity, or surplus accumulation. Even if this could be mapped, resolving the issue of a Deetzian clonal trajectory versus a Wallersteinian clinal trajectory may lie in methodological choices of a temporal scale and these methodological problems of studying large systems are not well understood. Methods developed by geographers (Muller 1973; Peet 1969, 1972) for analyzing documentary data are instructive for the analysis of archaeological data. However, the problem of compiling enough information from the material record alone limits the analytic use of these models.

A role for these models as explicit hypotheses does not exhaust the use of these large-scale models. They can also serve as metaphors guiding future research. Kuhn (1972:184) includes the notion of metaphor in his discussion of a disciplinary matrix. The ideas of a discipline include testable hypotheses, and notions that define essential categories of the world, thereby providing the primitive concepts structuring research. Using systems analysis to model culture is one familiar example of the latter from anthropology. Thinking about the effects of external connections by placing regions on supraregional landscapes is another. Supraregional landscape models, even if difficult to test (Lewis 1977; Paynter 1982), have a use in directing our attention to external processes shaping cultural adaptations.

Finally, one needs to keep in mind that while there is a need to describe relations in supraregional terms, and to be as precise as possible about how to measure these relations, descriptive models (such as clinal and modular landscapes) and diachronic models (such as clonal and clinal trajectories) are only descriptive. Causality requires considering underlying social relations. One framework for investigating political–economic relations is suggested in the following sections.

BEHAVIORAL RELATIONS IN FRONTIERS

Surplus Flow and Supraregional Models

Any attempt at explanation exists within an intellectual setting (e.g., Harvey 1973; Kuhn 1972). The following is developed from a materialist position within anthropology (M. Harris 1968:634–687; 1979; Kohl 1981; Price 1982; Wolf 1982), and it presumes that an understanding of cultural similarities and differences arises from a consideration of the material conditions of people's lives. Cultural materialist approaches, of course, cover an

enormous range of theory and a few key concepts help fix my position under this rubric.

Two specific notions underpin the following. The first is that when studying human societies, the social relations as well as the ecological relations must be analyzed to understand material conditions (e.g., Friedman and Rowlands 1978; Sahlins 1976). Archaeologists have effectively analyzed ecological relations, only recently turning their attention to the variety of social relations used to appropriate natural resources.

Second, the notion of surplus usefully describes the nature of these material conditions (Wolf 1982). All societies produce surpluses; the issue is how this is done and what happens to these surpluses (M. Harris 1959; Wolf 1966:4).

What are the social and ecological relations conditioning surplus production in frontier-homeland situations? And, how do they affect the developmental trajectory of this supraregion? The following review is restricted to considering these issues for stratified societies (Fried 1967:186), although ranked and egalitarian societies also deserve attention. Addressing the issues of material relations and effects involves delineating the strategic social and ecological relations involved in surplus production that are likely to have an impact on frontier developmental trajectories.

Samir Amin (1980:131–149) provides a beginning point for answers. He suggests that one initially consider the class relations of both the homeland and frontier area when trying to elucidate developmental trajectories. Homelands and frontiers, or cores and peripheries, in his terminology, would appear as clinal supraregions. By emphasizing class relations Amin calls attention to *social actors* who are the primary producers of surplus but who have unequal access to this surplus and elites who control the surplus. In the peripheral area, such as a frontier, the elites may be divided into two factions: those interested in supporting the flow of surplus out of the periphery, and those attempting to capture and keep these surpluses within the periphery (Amin 1980:136–141; Schneider *et al.* 1972). More is said about these elites later. For now, following Amin, a behavioral model seeking to account for clinal distributions of surplus needs to consider primary producers and elites.

A problem with models that stress social conditions, such as Amin's, is that they overlook the very real conditions imposed upon production due to the relations with the frontier's environment, both natural and cultural. Recent research in ethnohistory and anthropology (e.g., Ceci 1977, 1980; Jennings 1975; Moore 1981; Salisbury 1982; Wolf 1982) calls attention to the fact that frontiers are rarely open habitats. Even if the aboriginal population does not inhabit the same niche as the expanding culture, expansion

leads to interaction. Interaction with the aboriginal population is instrumental in early stages of surplus extraction. Furthermore, these surpluses are not abstract items, but are real resources extracted from real ecosystems. As cultural ecological studies abundantly point out (e.g., D. Harris 1972; Rappaport 1968), resource extraction from specific ecosystems often involves disturbing the ecosystem. This is especially likely to be the case on a frontier where a culture is exploiting an unfamiliar habitat. Thus, an important component in models of frontiers should include the actors of the aboriginal cultures as well as the nature of the regional ecosystem.

These considerations suggest that behavioral models aiming at accounting for synchronic surplus flows between frontiers and homelands, and diachronic changes following clinal or clonal trajectories, need to consider a number of relations. On the frontier there are the relations between elites and primary producers, between members of the colonizing culture and the aboriginal culture, and between both of these cultures and the frontier's ecosystem. Furthermore, these frontier relations are conditioned by relations in the homeland, relations between elites and primary producers, homeland ecological relations, and importantly, relations between homeland elites and populations in the frontier as well as between homeland primary producers and frontier populations. A full global model of surplus flow—*theoretical or descriptive*—is thus a rather complex affair. The following considers some of these strategic relations, principally from the point of view of elucidating surplus flow in the frontier.

Frontier Surplus Flows

At least four key levels are involved in modeling frontier surplus production and distribution:

1. The local environment—with the local ecology as the ultimate source of material.
2. Frontier primary producers responsible for surplus production.
3. Regional elites who channel in greater or lesser amounts the flows from the frontier.
4. The core elites with an interest in homeland frontier relations.

Other positions are involved in a full model of frontier social organization; however, these four strategic levels need to be considered when modeling the specific problem of how surplus is produced and distributed. To facilitate the use of this model, some examples are presented of the interests each of these key levels has in surplus flow, and some of their effects on frontier development are suggested.

Local Environment Relations

There is little that needs to be said about the importance of understanding the processes of the local ecology since this is given in much contemporary archaeological research. It is obviously important if we are interested in the production and export of surplus because we have to know something about the natural world from which the products are extracted. Note, this last point is not to say that the environment either determines or is the major factor of change regarding the production of surplus; rather it is to point out that the opportunities for surplus production are constrained in important ways by ecological relations.

Modeling the local ecology is not a descriptive task exclusively. It is important to grasp the ecosystemic relations of the natural environment. This requires interpreting the empirical data in light of general ecosystem theory. For instance, May's (1973) work on community matrices, J. Maynard Smith's (1974) models of predator prey systems, and Horn's (1974) theories of succession all offer largely untapped perspectives on how ecosystems respond to changing production strategies (see also Cody and Diamond 1975; May 1976). By knowing ecosystem structure and process, we are in a better position to evaluate ecosystem constraints on human production. Examples of the use of such approaches in archaeology include D. Harris's (1972) analyses of early agricultural systems, Green's (1979, 1980) studies of frontier agriculture, Perlman's (1976) analyses of settlement-subsistence systems, and Keene's (1982) analyses of diet.

A second important component of the local environment is the aboriginal population. All too often this social aspect of the environment is not included in models of general frontier process. For instance, Hudson's (1969) important models stress the pressures for land competition emanating from the core without taking into consideration the resistance to expansion offered by aboriginal populations. Similarly Wallerstein (1974) emphasizes the dynamics of capitalist expansion without paying enough attention to aboriginal response (e.g., Ceci 1977; Moore 1981; Wolf 1982). Even when aboriginal populations are considered, they are frequently misunderstood. Two recurring problems are the overemphasis on the limited spatial extent of these societies (Paynter and Cole 1980), or an emphasis on the stability of aboriginal society (e.g., Martin 1973). Fried (1975), Wolf (1982), and Leacock (1981) all criticize simplistic models and suggest more realistic alternatives.

Some ethnohistorians have been incorporating these critiques and are making more valid studies of frontiers (Jennings 1975; Salisbury 1982). In these, the cross-cultural contact experience is seen as a zone of interaction (Cooter 1977; Miller and Savage 1977) within which the social relations of

the aboriginal population condition and change the colonizing population to significant extents. Since aboriginal labor is often responsible for surplus production at some stage in frontier development, a clear understanding of how ranked, egalitarian, and noncapitalist stratified societies mobilize labor and produce surpluses is crucial for elucidating the relations driving surplus production on frontiers.

In sum, since the surplus is extracted from frontier ecosystems and is often produced by aboriginal labor, these relations require attention to understand surplus flow and frontier change. The local ecology certainly conditions the amount of energy necessary to gain various forms of production. Minor adjustments in homeland subsistence strategies will be necessary in the new environment. Furthermore, inappropriate homeland production procedures might trigger unforeseen ecological catastrophes, thus drastically altering the developmental trajectory of the frontier. Similarly, resistance by aboriginal populations can affect the developmental trajectory from frontier status while easy domination can provide the impetus for fast change.

Primary Producers

A variety of social relations surround frontier production. For instance, production can take place in households (Hopkins and Wallerstein 1977:135); under arrangements of sharecropping or tenancy (Wallerstein 1974:106–107); under the wage relation; on plantations through slave labor (Wallerstein 1974:87–96; Williams 1944); and so on. Of this inexhaustive list two things are clear: first, any frontier is likely to consist of a number of these forms of surplus production; second, elucidating surplus flows requires linking these institutions backward to the local ecology and forward to the frontier and homeland elite.

Wolf's (1966:4–17) models of household production exemplify how the dynamics internal to primary-producer production can be articulated with other social and ecological positions. The key notion in his model is that of a fund. Model householders place production into various funds earmarked for different purposes. Wolf (1966:6–9) specifically considers four funds. Payments into a *caloric fund* are used to meet the biological demands of the household. Production sent to other funds is properly considered as surplus production. For instance, some production in agricultural households is contributed to a *replacement fund* for seed stock or feed for animals, or to replace worn-out tools and buildings through exchange with local craftspeople. Other production goes to the *ceremonial fund*. This surplus is used for local community ceremonies, such as celebrations of life-cycle events involving interhousehold exchanges (Saitta 1982) including births, first

haircuts, adolescent rites of passage, weddings, funerals, and so on, as well as participation in local political and religious rituals (e.g., a town meeting and feast days). Payments into the ceremonial fund take many forms including the producing or obtaining of costumes, food, and gifts. Finally, some householders pay into a *rent fund*. They find themselves under obligations to the elites—those who control strategic resources, especially land and armed forces. Gaining access to these resources, such as using land for production or keeping the militia away from the door, is based on channeling surplus to the elites as taxes, tributes, tithes, rents, and so on.

The perpetuation of frontier status—that is, a clinal developmental trajectory—results when there is no change in the institutional basis for surplus production. In other words, as long as primary producers continue to meet fund payments, then frontier status will be recreated. Change in this institutional form or production results when fund payments change.

One instance of change results from a failure to make payments. Failure to make payments into any of these funds is likely to put the household in jeopardy. Thus, the primary producers are pulled in a number of directions simultaneously. Either a large demand for payment into one fund, such as into the replacement fund after a bad harvest, or into the rent fund after increased demands from core elites, or the cumulative effects from all of these can lead to household failure.

Wolf (1966:6–9) presents an example of a household in jeopardy. A German peasant household had a 40-acre farm producing 10,200 pounds of grain crops a year. Of this production, 3400 pounds went into seed stock, 2800 pounds went to feed the four horses, and 2700 pounds went in rents. This left 1300 pounds for the caloric fund (on the assumption that none went to ceremonial fund payments). The result was a daily caloric budget of 1600 calories per person, a value below that usually needed by adults (e.g., FAO/WHO 1973). This is clearly a household in jeopardy. Participation in community affairs is minimal, caloric intake is precariously low, and alleviation of these problems by cutting into rent payments is likely to incur the wrath of the elite. This household is not likely to reproduce its biology, its internal social relations, its ties to other households, or the relations of stratification. If other households face similar problems, general culture change is expectable. One change involves restructuring the payments, such as by changing the technology of production or altering payments to the elite. Alternatively, no change in the structure of payments will also lead to a change, most likely the abandonment of the area. The point is that underpayment is symptomatic of systemic problems and is likely to trigger large-scale change.

The trajectory taken is dependent upon a number of factors, including the nature of the subsistence system, the relations among primary producers,

and the relative political strength of primary producers and elites. The utility of Wolf's model of payments is that it identifies these connections and thereby suggests some of the factors conditioning frontier development.

Wolf's models are especially useful on frontiers where households are an important unit of production, consumption, and social reproduction. Where production involves slave labor or migratory wage labor, or any other labor forms, production needs to be conceptualized with different funds. Although the funds for these different forms of labor organization will be different from those under household production, they too need to be set in a large relational context. This context, suggested in Wolf's model, traces surplus flows from the local environment into and between primary producers and ultimately to regional and core elites.

Regional Elites

Regional elites represent a third set of interests found on the frontiers of stratified societies. By definition, *regional elites* are those who control some of the surpluses produced by the primary producers. In terms of modeling their relation to surplus production and disposition, it is fair to assume that they will follow strategies that perpetuate their access to their social position as elites. This can be accomplished in a number of ways. Schneider *et al.* (1972) have discussed some of these strategies at great length, and their argument provides useful insight into the relations of elites. They distinguish between regional elites following a dependency strategy and elites following a development strategy. *Dependency elites* perpetuate their elite position by channeling surplus from the periphery towards the homeland. Not all surplus will move in this direction, as the dependency elites use some to solidify their position, such as by maintaining a local militia or administrative bureaucracy, or by monumental construction projects, and so forth. Because they do channel surpluses to the homeland, they have the support of the homeland if the frontier primary producers try to oust them. The *development elite* strategy entails maintaining their position by isolating the periphery from the demands of the homeland. Success rests, in part, on developing alliances with frontier primary producers, alliances based on keeping surplus production within the frontier area and lessening the primary producer's burden of surplus payments.

These strategies are obviously not completely exclusive. Elites are likely to mix core dependency with developing an independent base in their attempts to perpetuate their social position. Any frontier will exhibit some mix of both strategies. Furthermore, interpreting these strategies in prehistoric settings raises considerable methodological problems. Clues might lie in data from elite residences disclosing symbolic alignment with or opposition to

homeland symbolic systems (Schneider 1979). Our attention to backward links to primary producers also might disclose these strategies. For instance, since a successful developmental strategy relies on mobilizing frontier populations against the homeland, studying the conditions giving rise to successful mobilization may provide essential clues. These can be found in investigations of primary producers rather than elite residences. One body of literature that might be tapped for models of these conditions concerns rebellions and revolutions (Moore 1966; Wolf 1969) about which more is said later. Even though the methodological problems of distinguishing dependency and development strategies are real, they do deserve attention. The success of these strategies greatly conditions surplus flows as well as the diachronic direction of frontier change. For example, a frontier characterized by dependency elites is an area likely to follow a clinal trajectory with little shift in the location of the cline. Alternatively, development elite strategies can lead to frontier developmental trajectories along clonal paths. This role of the elites in surplus flow is crucial for understanding frontier development.

Homeland Elites

A fourth component constraining surplus flow in frontiers are the homeland elites. *Homeland elites* reside in the homeland, or core area, coordinating and benefiting from the extraction of surplus from frontier and homeland primary producers. When frontier colonization leads to surplus accumulation controlled by elites, then the logic behind homeland elite interests condition the developmental trajectories of the frontier. If the frontier is key to homeland elites maintaining their positions, then clinal trajectories are likely results. Alternatively, if homeland elites do not depend heavily on surplus flows from the frontier, or if frontiers can subvert homeland demands, clonal trajectories and even possibly clinal trajectories moving in space may result. The theoretical problem is to better understand the role that long distance exploitation plays in elite strategies and the methodological problems involved in interpreting the success and failure of varying strategies.

Precious little guidance on the theoretical problem exists in the literature on homeland or core elites (e.g., Amin 1980:133–149; Finley 1973; Friedman and Rowlands 1978; Wallerstein 1974, 1980). Probably the best understood political economy that regularly produces frontier–homeland relations is capitalism. Though the theoretical position of frontiers is a point to debate (Brenner 1977), the following general sketch of elite interests describes some of the basic functions of frontiers.

European homeland elites used a number of strategies to extract surpluses

from European primary producers. By the fifteenth century feudal extraction was supplemented by capitalist wage relations (Sweezy 1942:61–62). For a number of reasons, capitalist elites extracted surpluses from frontiers to support their accumulation strategies at home. Frontiers, for instance, provided sources of exotic raw materials used in monopoly exchanges as well as the raw materials for industrialization. Frontiers also provided areas where labor, unfamiliar with capitalist production, was brought into the production system. As a result, labor on the frontiers was drawn into capitalist production through slavery, tenancy, or various other arrangements (Williams 1944). Finally, frontiers provided markets for capitalist production. Thus, an understanding of the capitalist frontier has to take the interests of core elites—especially the search for raw materials, labor, and marketing—into consideration.

Precapitalist elites' use of the frontiers is not based on similarly strong theory. Theoretically, not all precapitalist stratified societies need to have systemically produced frontiers, though empirical evidence from the Southwest (McGuire 1980), the Iranian plateau (Lamberg-Karlovsky 1975; Kohl 1978), and the Yucatan (Sabloff and Rathje 1975), among other areas, suggests that some kind of large-scale process operated. One important interest attributed to precapitalist elites is the obtaining of slaves for homeland production (Finley 1973). Obviously, drawing slaves from frontiers has certain advantages since the slaves are unfamiliar with the culture of the homeland, and possibly have distinctive physical and behavioral traits. The frontier aimed at capturing slaves should look distinctive from those under capitalism, in part because homeland settlement of the slavery frontier would not likely be by whole families.

Another proposition for precapitalist societies suggests elite interests in obtaining exotic, luxury items (Friedman and Rowlands 1978:219). These are used as prestige items demonstrating the elevated position of the holder, and necessary for others to similarly exercise power. Imported exotic items support these few positions of prestige because they are scarce. However, models emphasizing this dimension of long distance process do not explain why distance, rather than a local monopoly or control of skilled labor, was used to create scarcity. Frontiers associated with this process should disclose mining operations and partial finishing sites as potential archaeological clues (Lamberg-Karlovsky 1975; Tosi 1977).

In a brief exposition, I (Paynter 1981:128–129) drew on the work of Wolf (1966) and Finley (1973) to suggest a precapitalist process to stimulate settler frontiers. In some precapitalist formations elites draw their base of power from participating in a bureaucracy. This participation gains them access to tributes from serfs. Given the instability of political fortunes, some elites might try to hedge against political disaster by building up a surplus of

tribute. This could be done in preindustrial societies only by increasing the number of serfs under their domain. One way to accomplish this would be to colonize frontiers and open more land. These settler frontiers would exhibit agricultural settlements with more complete domestic units, as well as a displacement of aboriginal cultures, thus producing archaeologically distinctive traits.

The diversity of ideas concerning precapitalist elite interests in frontiers in part reflects a lack of theory. It also reflects the reality that a diversity of these processes existed and have yet to be fully elucidated. Building this kind of theory is certainly crucial for understanding supraregional change, however, since homeland elites have the potential to wield the most amount of power of any of the actors participating in frontier-homeland relations. Their interest in doing so, as well as their success or failure, will condition the type of trajectory observed.

Strategies of Domination and Resistance

One of the reasons for distinguishing these four levels of interaction is to point out that all the pieces do not necessarily (and in fact are unlikely to) neatly feedback and support one another. For instance, the extractive procedures followed by the primary producers are not necessarily going to lead to ecosystem regeneration. Or for that matter, the demands for surplus placed on the primary producers by elites may themselves be the cause of ecological degradation. All demands for surplus are not going to be met; primary producers losing their ability to reproduce their households might resist demands for more production. In some situations, the primary producers find allies among the regional development elites in the resistance of core elite demands. In other situations, core elite-regional dependency alliances might subvert these resistance efforts.

The point is this: in any specific situation there will be a specific mix of strategies of resistance as well as strategies of domination being exercised by members of these various levels. The total systemic trajectory is emergent from these interlevel interactions. The total system of surplus flows is not solely in the interest of the core elite, nor is it solely in the interest of the primary producers. Delineating these levels within a frontier is just the starting point for further elucidating the developmental trajectory of the frontier. How surplus is produced and distributed is a result of the tensions and struggles—understood as the strategies of domination and resistance—practiced by the individuals in these different roles (Amin 1980).

Domination and resistance can be exercised in all domains of culture. For instance, resistance can be exercised in the economic domain by withholding

surpluses, or monopoly cornering of markets can be a tactic of domination used by elites. Domination can be exercised in the political domain by stationing troops just as riots, rebellions, and revolutions represent resistance. The symbolic domain can be manipulated in either case through such acts as wearing distinctive clothing (Schneider 1979; Tryon 1917:54–55) or adhering to specific beliefs. In a given setting any and all of these elements of a cultural system may be part of the tactics used in the strategies of domination and resistance.

Two brief examples illustrate the tensions between levels and their potential effects on the developmental trajectory of frontiers. The examples emphasize tactics using the political and economic domains. Fuller analyses of a situation would also investigate symbolic manipulations.

What conditions might underlie a frontier's population backing a development elite and attempting, as a region, to redefine its ties to both the regional elites, and through them with the core? The literature found on peasant revolts is ripe with suggestions, including those in Wolf (1969) and Friedrich (1977). One condition, found in many of these works, is the notion of an ecological crisis among the peasantry. When peasants are no longer able to meet their fund payments because of increasing peasant household sizes, or a degrading environment, or escalating rent demands from the core elites, the peasants will be in an energetic bind. Physical resistance to further surplus extraction is a likely result. As Wolf (1969:293) points out, peasant rebellion is rarely enough to generate success in eluding core demands. Successful resistance also involves being a sufficient distance from the core to be insulated from retaliation, and mobilizing a regional development elite as leadership for the peasant uprising. Only when the peasantry has been moved by a crisis in the material relations and led at a safe distance from the core by a new elite can the frontier redefine its obligations with the core. Such a successful rebellion is one behavioral scenario behind a clonal trajectory.

Another example of primary-producer resistance and elite response is found in postrevolutionary New England (Szatmary 1980). In this case, it is an international economic crisis rather than an ecological crisis that stimulates resistance. After the Revolution, British colonial policies officially restricted United States direct trade with the British West Indies. Even though illegal trade was conducted, the economic position of New England merchants, and particularly those of the Connecticut River valley, became precarious. Prior to the Revolution these merchants had exported foodstuffs and other staples to the West Indies in return for bills of exchange which were used to obtain manufactured items from Britain. The manufactured items were then traded to the interior farmers for the staples sent to the West Indies. Because of time delays, credit was the basis for the exchanges.

When it became clear that the Connecticut River valley merchants were no longer able to pay for manufactured items with goods or credit from the West Indies, British manufacturers stopped granting the New England merchants credit on manufactured items and called in past loans made to the merchants. Payment of these loans was, in turn, required from more remote merchants, and finally from the staple-producing farm households in the interior. By the mid-1780s almost 3000 debt cases were heard in the interior county of Hampshire involving roughly 30 percent of the males over 16 (Szatmari 1980:29). Fear of losing property and being jailed conditioned a revolt known as Shays' Rebellion, but the revolt was swiftly put down by forces allied with the merchants. Not the least of the farmers' problems stemmed from their difficulty in developing a group of leaders—development elites—to organize their legal efforts and their military campaign. The defeat of the farmers perpetuated the clinal relations between the backcountry and the urban merchants.

These examples point out the utility of approaching clinal and clonal trajectories within the framework of dominance and resistance. First, this does seem to be an approach by which the determinism involved in simplistic developmental models or world system models can be avoided. Any particular trajectory reflects the differential success of social actors at the various levels in realizing their goals, and is not a foregone conclusion.

Second, the conditions that surrounded these outcomes pose interesting problems for further research. For instance, the broad issue of the conditions of clinal versus clonal trajectories is refined by this framework. Clinal trajectories with no spatial change are associable with the success of core elite domination strategies. Evidence of such poses questions about the cooptation of regional elites, about how ecological crises were averted, and, if not averted, how primary-producer mobilization was subverted. Alternatively, clinal trajectories moving in space reflect the subversion of homeland elite strategies, not only with regards to the frontier, but also with regards to exploiting the homeland primary producers. Clonal trajectories suggest the successful alliance of regional development elites and frontier primary producers. The conditions surrounding this resistance of homeland extraction would be worth further investigation. Identifying patterns in these conditions is the basis of useful ethnological generalization.

In sum, clinal and modular landscapes and clinal and clonal trajectories representing the distribution of social surplus on supraregional landscapes require behavioral models. These models should address ecological relations as well as the interests of primary producers, regional elites, and homeland elites in the production and distribution of social surplus. No single set of interests or ecological constraints stimulate a particular trajectory. The clinal or clonal trajectory emerges from the differential success of strategies

of domination and resistance. Full elaboration of these for a specific area is a very large undertaking, however, even asking about frontier change with this framework brings a new perspective—one that avoids the localism of narrow ecology and the misconceptions about space in diffusionist interpretations. The next section makes these points by addressing some problems in the developmental trajectory of historical New England.

FRONTIER CHANGE IN HISTORICAL NEW ENGLAND

A preliminary analysis suggests the utility of the model of frontier surplus flow and strategies of domination and resistance when investigating homeland–frontier relations. It involves a problem for a part of historical New England, the abandonment of the hill towns in western Massachusetts. The abandonment of these towns is associated with the moving of the frontier through New England and the subsequent development of New England into an industrial core area. Although it is not a complete analysis, it does suggest ways to synthesize the historical archaeology of the rural north. A major reason for presenting this analysis is to raise new questions and suggest further research using the frontier surplus flow model and domination–resistance strategies.

New England Farm Abandonment

During the nineteenth century a part of New England was abandoned in association with the development of industrial workforces and westward expansion (Matthews 1962). The uplands of western and northern New England were the principal areas of net population loss. The following analyses concern Hampshire County in western Massachusetts (Figure 8.1). Within this region a number of towns experienced depopulation and others saw considerable demographic growth. Comparing these different towns provides some insight on the processes responsible for abandonment and growth. Understanding why people left the hill towns and why the valley towns grew is one step towards understanding how the frontier passed through this area and, ultimately, why New England followed a clinal developmental trajectory eventually rivaling the English homeland for political, economic, and ideological hegemony.

Three models accounting for abandonment are considered. Each emphasizes different levels in the model of frontier surplus flow. The first stresses local ecological relations as the conditions of depopulation. The second

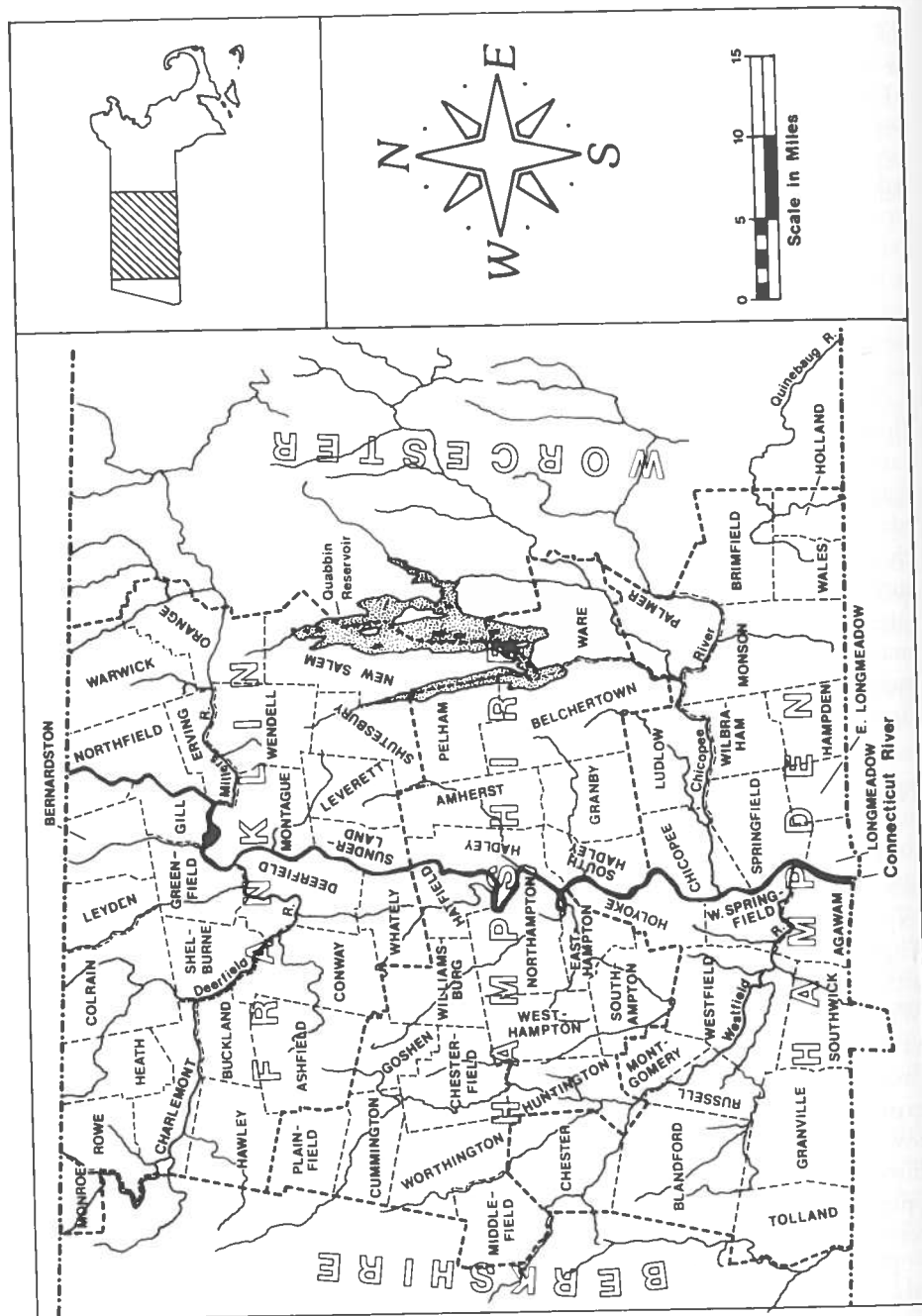


Figure 8.1 The Connecticut Valley of western Massachusetts.

suggests that the social relations of primary producers were responsible for westward migration and, by implication, upland New England's depopulation. The third suggests that the interests of regional and homeland elites need to be taken into account, along with ecological and primary producer relations, when considering the depopulation of this area.

The Depopulation of the Connecticut Valley Hill Towns

Hampshire County lies within the Connecticut River watershed of western Massachusetts. Major geomorphological features of the Connecticut River watershed include the north-south tending valley of the Connecticut River and the east-west tending valleys of the Miller's, Deerfield, Westfield, and Chicopee Rivers. These five valleys were major transport arteries in the nineteenth century. The uplands to the east and west (the Worcester plateau and the Berkshires, respectively) differ from the Connecticut River valley lowland in the center, along a number of ecological variables. Generally, the soil, terrain, and climate of the lowlands was more conducive for labor and capital-intensive production than that of the uplands (Klimm 1933; Pabst 1941; Paynter 1982).

Subregions within the valley had different demographic and settlement patterns. Until the close of the Seven Year's War (1763), settlement was concentrated in the lowlands of the valley. After the decline in frontier hostilities, however, the uplands were rapidly settled. This initial period of expansion was followed in the first half of the nineteenth century by uneven demographic change. Generally, the valley lowland towns tended to gain population, while the hill towns, after a period of growth in the beginning of the nineteenth century, lost population (Klimm 1933; Pabst 1941; Paynter 1982).

A number of studies have been made of these contrasting demographic trends. Of particular interest is the work of geographer L. E. Klimm (1933). Klimm identifies five town types based on differing demographic trends. Four of these are found in Hampshire County (Figure 8.2). Rapid population gainers are Northampton-type towns. Hadley-type towns grew, slowed, and then grew again. Unclassified towns grew and then reached a stable size. Finally, towns that displayed growth and then decline (the decline beginning between 1810 and 1830) are Ashfield-type towns. Of these four town types, the Ashfield towns are the only ones with most of their land above 500 feet. The Ashfield towns are located within the New England uplands that more generally lost population in the nineteenth century.

Population density figures for Hampshire County also disclose these tendencies. County density in 1800 was 40.04 people per mile². This increased

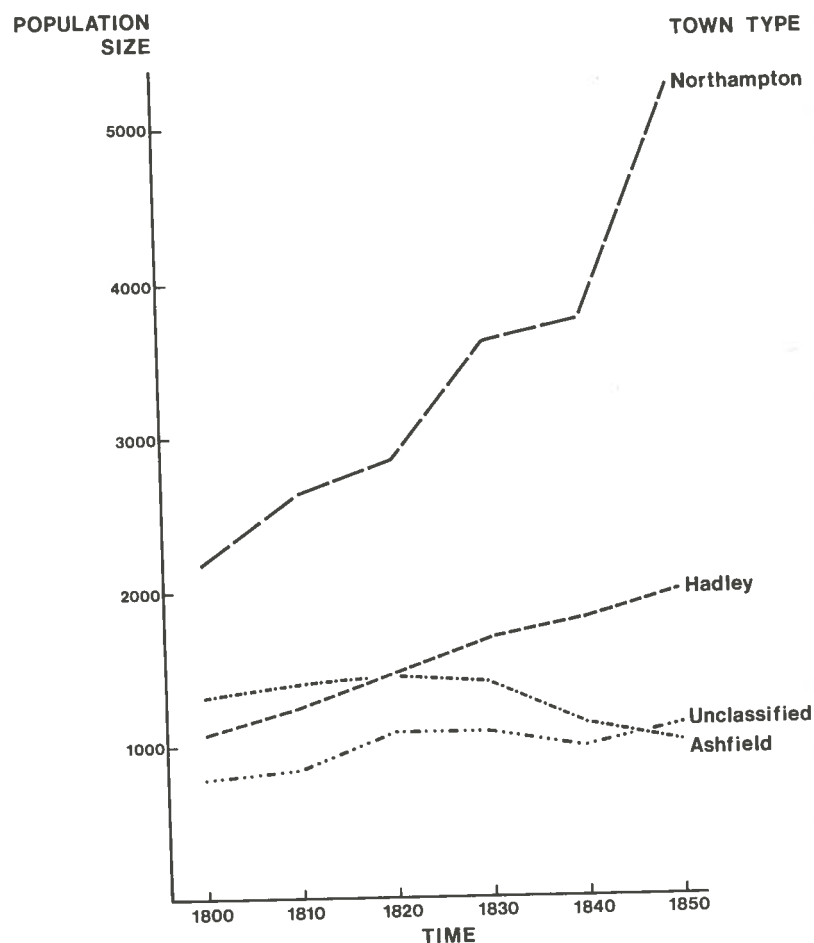


Figure 8.2 Demographic change in the four town types of the Connecticut Valley.

to 60.49 people per mile² by 1850. The Northampton-type towns grew dramatically from 44.03 people per mile² in 1800 to 106.64 people per mile² in 1850. All other town types similarly exhibited growth in population density *except* for the Ashfield-type towns, the average of which fell from 39.05 people per mile² in 1800 to 36.32 people per mile² in 1850.

Accounting for these different trends entails modeling underlying behavioral relations. There are a number of suggestive notions of eighteenth- and early nineteenth-century rural life that lead to implications for demographic change. For instance, some archaeologists and geographers (e.g., Klimm

1933; Thorbahn and Mrozowski 1979) account for depopulation by emphasizing the relations between primary agricultural producers and the natural environment. Some social historians, such as Henretta (1978) emphasize the social relations within the families of primary producers. Alternatively, Lemon (1980) calls attention to the interests of homeland elites by placing farmsteads within the context of changes in a world-scale capitalist social formation.

The implications for depopulation are most easily seen with the ecological approach. For instance, Klimm (1933:44) accounts for the abandonment of hill towns as follows: "The topography is so rough and the soil so poor in the Uplands that a living could be made in agriculture only with the greatest difficulty. The thin soil 'wore out' in a very short time." Soil exhaustion provided the push out of the region and the more fertile soils of the west provided the pull. As a result, the hill towns were depopulated. Thorbahn and Mrozowski (1979) argue that deforestation associated with agricultural production created the potential for flooding within the hill towns. This flooding covered good agricultural land with boulders and alluvium, and stripped topsoil from other productive lands. The result was a very strong push out of the uplands.

For Henretta (1978) the source of difficulty for rural farmers lies not in the environment but within the social relations of the primary producers. One of the problems faced by lineal families was "the continual pressure of population on the existing capital stock; the rate of natural increase constantly threatened to outstrip the creation of new productive resources; cleared land, machinery, housing and livestock" (Henretta 1978:24). When a population put pressure on the capital stock a solution was to move part or all of the family to the West (Henretta 1978:27). As Henretta notes (1978:9), "Massive westward migration enabled a rapidly growing Euro-American population to preserve an agricultural society composed primarily of yeoman freeholding families in many eastern areas." In this case, hill-town farm depopulation is not as much abandonment of degraded habitat as it is a release of surplus population to pursue their life elsewhere.

The model emphasizing the place of western Massachusetts within the capitalist world system also has implications for depopulation. From this point of view, any local unit's production is related to the production and accumulation of surplus over the scale of the society. The family farm is part of "an interlocked landscape like a jigsaw puzzle . . . an instrument of empire building" (Lemon 1980:131). Much of this production, from the sugar plantations of the West Indies to the farms of the rural north, was based on tilling the soil. Total depopulation of an area amounted to withdrawing some soil from agricultural production. Partial depopulation of an area, such as encountered in the hill towns, suggests a change in land use from a

labor-intensive form to a less labor-intensive form. Unlike the lineal family model, this source of demographic change does imply changes in production. Thus, in the model of elite interests, demographic change is due to changing land use rather than the abandonment of a degraded environment or a response to primary producers.

Which processes drove the frontier through western Massachusetts? If the dominant processes concern either primary producer—natural environment relations or lineal family demography, then the forces shaping frontier development are largely found within the frontier itself. This frontier change would be unrelated to processes of world-scale surplus flow or class struggles over surplus production. Alternatively, evidence for shifting land use patterns suggests that class relations, including regional and homeland elite interests, were conditioning frontier development. In this case, depopulation reflects class struggle over the use of land in the form of the unsuccessful resistance by some primary producers to the demands by elites for new forms of surplus. A closer consideration of these towns sheds some light on the relevant processes.

Model Evaluations

Ecological Relations

I begin by considering the ecological model for abandonment. The degradation proposition is that the hill-town environments were marginal for mixed agricultural production. The climatic conditions, soils, and terrain made hill towns susceptible to erosion and soil infertility, especially with the primitive agricultural practices of the late eighteenth- and early nineteenth-century farmers. Once biodegradation began, the lands of New York and the Old Northwest attracted Massachusetts hill-town populations.

Documentary material—Massachusetts tax valuations for 1771, 1831, and 1841—allow for some initial assessments of this ecological scenario. A basic expectation is that evidence for biodegradation should be more prevalent in hill towns than in the other towns.

Two measures were used, an index of biodegradation and a measure of productivity. The index of biodegradation was constructed from the valuations from 1831 and 1841. These delineate the number of unproductive acres—unimproved and unimprovable acres—and the number of productive acres—acres in woodlots, pastures, fresh meadows, mowing, and tillage. If biodegradation were solely responsible for hill-town abandonment, then the hill towns should have relatively large numbers of unproductive acres and relatively small numbers of productive acres. Dividing the unproductive acres by the productive acres provides an index of bio-

Table 8.1
Biodegradation Index: Unproductive Acres/Productive Acres^a

A. TOWN-TYPE STATISTICS (1831 and 1841)						
	County		Northampton type	Hadley type	Hill-town type	Unclassified type
\bar{X}	31	.67	.63	.39	.69	.83
	41	.48	.44	.09	.45	.72
<i>SD</i>	31	.49	.37	.08	.63	.27
	41	.32	.35	.04	.26	.28
<i>MD</i>	31	.60	.67	.39	.46	.89
	41	.49	.40	.09	.41	.75
<i>N</i>	31	23	6	2	10	5
	41	23	6	2	10	5

B. HILL-TOWN COMPARISONS TO COUNTY MEAN AND MEDIAN VALUES				
	Year (1831)		Year (1841)	
\bar{X}	Hill Town > County		Hill Town < County	
<i>MD</i>	Hill Town < County		Hill Town < County	

C. RANK ORDERS OF VARIOUS TOWN TYPES				
	\bar{X}		<i>MD</i>	
	Year (1831)	Year (1841)	Year (1831)	Year (1841)
1. Hadley		Hadley	Hadley	Hadley
2. Northampton		Northampton	Hill town	Northampton
3. Hill town		Hill town	Northampton	Hill town
4. Unclassified		Unclassified	Unclassified	Unclassified

^aFrom Massachusetts tax valuations. 1 = least degraded.

degradation. Under the biodegradation proposal, the hill towns should have the most degraded land and, thus, the largest indexes of degradation.

The tax data only weakly support this suggestion (Table 8.1). Ideally, the hill-town index should be greater than the aggregate county index and greater than the index for other towns. However, only when using the mean index of degradation in 1831 is the hill-town index greater than the county index. Importantly, the hill towns never have the largest index; in fact, the hill towns are quite close to being the second *least* degraded town type.

A second evaluation of the biodegradation scenario can be made with productivity figures from the 1771 and 1831 tax valuations. Each reports information on acres in tillage and bushels of grain produced. If biodegradation were a primary factor in abandonment, then the hill towns should

Table 8.2
Productivity Index: Bushels of Grain/Acres of Tillage^a

A. TOWN-TYPE STATISTICS (1771 and 1831)						
	County	Northampton type	Hadley type	Hill-town type	Unclassified type	
\bar{X}	71	6.86	6.17	8.21	8.01	6.31
	31	12.26	11.10	6.92	15.12	10.06
SD	71	1.73	.62	na	2.56	1.13
	31	5.06	4.73	2.97	5.08	1.18
MD	71	6.30	6.32	8.21	8.15	5.48
	31	13.03	11.08	6.92	13.55	9.86
N	71	12	4	1	3	4
	31	22	6	2	10	4

B. HILL-TOWN COMPARISONS TO COUNTY MEAN AND MEDIAN VALUES

	Year (1771)	Year (1831)
\bar{X}	Hill Town > County	Hill Town > County
MD	Hill Town > County	Hill Town > County

C. RANK ORDERS OF VARIOUS TOWN TYPES

\bar{X}		MD	
Year (1831)	Year (1841)	Year (1831)	Year (1841)
1. Hadley	Hill town	Hadley	Hill town
2. Hill town	Northampton	Hill town	Northampton
3. Unclassified	Unclassified	Northampton	Unclassified
4. Northampton	Hadley	Unclassified	Hadley

^aFrom Massachusetts tax valuations. 1 = most productive.

Rank

display relatively low productivity after the period 1810–1830. Table 8.2 has these productivity values. The hill-town values do *not* support the biodegradation scenario. The mean and median productivity values for the hill towns is greater than the county mean and median values in 1771 and 1831. Furthermore, rank orderings of the town types based on the mean and median values disclose that the hill towns were the second *most* productive towns in 1771 and the *most* productive in 1831.

These two indexes by no means demonstrate that biodegradation played no role. Larger samples (including the towns of Franklin and Hampden counties), shorter time intervals (creating a continuous sequence), and field surveys analyzing hill-town soil conditions (Thorbahn and Mrozowski 1979) all would be useful to fully elucidate the role of biodegradation.

However, these assessments do not strongly support the biodegradation model and do suggest that, minimally, more than biodegradation was at work.

Primary Producer Interests

An alternative hypothesis for depopulation is based on the lineal family model of rural northern social relations. Most of the hill towns were incorporated in the second half of the eighteenth century and reached their population peaks between 1810 and 1830. This demographic peak may be due to the demographic dynamics of lineal family reproduction in a relatively young colonizing population, and not the operation of class processes. The following is one model of these dynamics.

Assume that a town is colonized by a young population with high fertility, relatively low mortality, and a balanced sex ratio—not an altogether unreasonable assumption for the Connecticut River valley in the late eighteenth century (Swedlund *et al.* 1976). Furthermore, assume that the population is composed of young adults intent upon improving the material conditions of their and their children's lives. Consistent with the lineal family model (Henretta 1978), the principal adult concern is to amass enough surplus to leave their children the wherewithal to reproduce a lineal family. This surplus may take the form of a nearby farmstead, the capital to make a farmstead in a new area, or the parent's farm.

A town following this strategy could have the following growth pattern. Assume that the initial wave of colonization fills all the available farmland. No new households could be moved in without a household moving out. However, since these are young couples, this economic limit is not the demographic limit. The population of the area could still grow and support larger families, as long as these larger families did not constitute new households. An economic crisis occurs when the children come of an age to start new households. The solution that reproduces the lineal family lies in out-migration. As the older children move elsewhere to find available land, the town's population declines. Thus, a boom–bust cycle characterizes the demography of the town based on the economic limit set by the reproduction of the lineal family. The observed demographic pattern of hill-town population growth and decline would be due to the passing of this wave of dependent children through the area.

Studies of the demography of the Connecticut River valley in the eighteenth and early nineteenth centuries suggest equal parity in sex ratio, birth spacing of about 30 months, and dependency periods of 27 years for males and 22–24 years for females (Temkin-Greener and Swedlund 1977). If the entire stock of available farmsteads was occupied in the first colonization,

Table 8.3
Model Lineal Family Demographic Pattern

Year	Males	Females	Total
0	1	1	2
5	2	2	4
10	3	3	6
15	4	4	8
20	5	5	10
25	6	6	12
30	5	5	10
35	4	4	8
40	3	3	6
45	2	2	4

then after 22 to 27 years the area would begin to see demographic decline as the oldest children move to other areas to establish their families.

The result, for instance, might look like the model values in Table 8.3, in which the pattern of population growth and decline is simply in response to the problem of reproducing lineal families. For ease in modeling, assume that the town has room for only one farm. (Calculating figures for larger, more realistic towns involves multiplying by the constant of the number of farms per town.) The year of colonization sees this farm occupied by a childless couple. With birth spacing of 30 months and relatively equal sex ratio, a census of the area after 5 years reveals a two-child, four-member household. Population growth continues until some time between the twenty-fifth and thirtieth years when the first children move elsewhere to find the land to start their own lineal families. This begins a period of population decline—a decline that continues until one of the ultimate children gains access to the farm, then the boom–bust cycle would begin again.

How then do we evaluate if the empirical pattern of hill-town depopulation is due to the underlying processes of lineal family reproduction (modeled in Table 8.3)? One method is to examine the population structure of the model and the towns. Population structure is studied by analyzing the population by age–sex categories. A familiar representation of this information is a population pyramid (e.g., Pressat 1972; Wilson and Bossert 1971) in which the proportion of individuals in equal age intervals are plotted by sex as bar graphs. The proportions appear on the *x* axis and age groups on the *y* axis, males are plotted to the left and females to the right.

Figure 8.3 is a description of the changing population structure modeled in Table 8.3. The graph of year 0 is of the very young, high-fertility, low-mortality, initial colonizing population. The bulge in the younger years

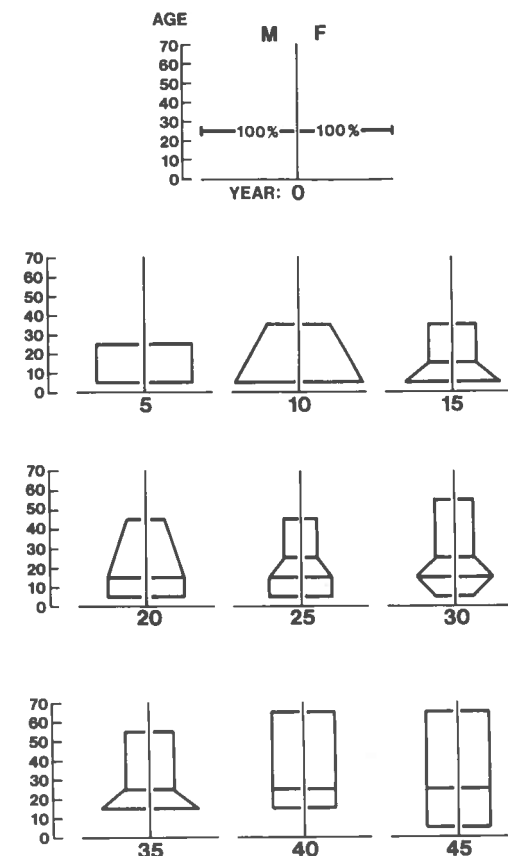


Figure 8.3 Population pyramids for the lineal family model of settlement growth and abandonment.

(e.g., year 10) is due to births to the first generation couple. As these children age, the bulge shifts up through the age categories (e.g., year 35). As any but the ultimate children (male and female) reach the category of 25–30, they out-migrate. Thus, the bulge does not continue up the age categories as in unconstrained models of aging populations; nor do third generation children appear in the younger age categories until the ultimate second generation males and females, those inheriting the family farm, bear them. In sum, this sequence of age structure graphs is expectable if the lineal model is responsible for the increase and then decrease in hill-town populations. The sequence is what can be compared against empirical plots of age structures.

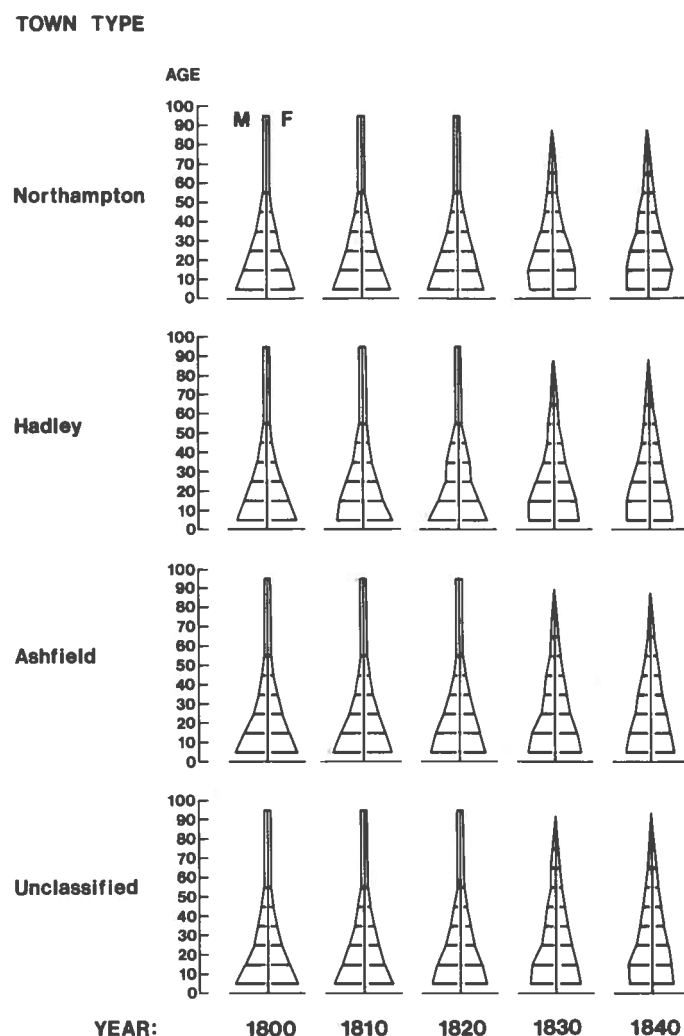


Figure 8.4 Population pyramids for the Connecticut Valley town types: 1800–1840.

Figure 8.4 contains the empirical plots for the years 1800 through 1840. Three points should be noted about the construction of these graphs. First, all four town types are graphed on separate lines. Second, the data for the graphs is from federal census data. It was not until 1830 that the federal census reported demographic information in 10-year intervals, thus, 10-year intervals had to be constructed for the first 3 years. The procedure

was to calculate the average population per year per category (total population per age–sex category/number of years per age–sex category) and assign this to each year within each age–sex category. With estimated numbers of people per year, it is possible to regroup the age–sex categories into 10-year intervals and create the very smooth graphs for the years 1800–1820. This assumes an even distribution of people within each age–sex category. Other routines for estimating the number of people per year could have been used (e.g., linear interpolation or exponential functions), however, their use would not change the overall appearance of the graphs. It is this overall form rather than any particular value that is important for comparison to graphs of the lineal family model. Third, the empirical graphs are quite similar in form to other graphs from the area. For instance, Swedlund *et al.* (1976) report population pyramids for towns in Franklin County that have quite wide bases and then decline through the older (upper) age categories. Thus, the techniques for constructing these graphs do not appear to have grossly distorted them.

Analysis of the empirical graphs does not support the proposition that the lineal family model was responsible for depopulation. First, the empirical plots do not exhibit the transformation sequence characteristic of the lineal family model. Rather, the empirical plots stay remarkably the same over the 40-year period. The only notable trend in the empirical plots is the decrease in the relative proportion of people in the youngest age category. This undoubtedly reflects the secular decline in fertility characteristic of the area, the New England region, and the United States generally during the first half of the nineteenth century (Swedlund *et al.* 1976; Temkin-Greener and Swedlund 1977). The out-migration of the hill towns would not appear to be solely due to a crisis driven by the logic of lineal family reproduction.

Second, the population structures for the various town types do not vary. Similar internal demographic relations are associated with towns losing population, gaining population, and staying relatively stable. This suggests that out-migration and in-migration, as well as local fertility and mortality, are responsible for town demographic growth patterns. Thus, understanding these growth patterns, such as hill-town depopulation, requires considering factors operating beyond the scale of the Connecticut River valley (Knights 1971; Swedlund *et al.* 1976; A. Swedlund, personal communication, 1983).

The discrepancy between the population structures for the empirical towns and the population structures for the lineal family model, and the similarity of population structures for all towns, indicates that the lineal family crisis is not responsible for the depopulation phenomenon. Note, I am neither concluding that lineal family processes were not operating in the area, nor that lineal family processes are never associated with stable, young

population structures, such as those in the empirical graphs. The sole point is that the lineal family model producing a boom-bust pattern also produces a population structure pattern that is not found in the empirical record. This together with the similarity of structures for all the towns suggests that the depopulation of the hill towns needs to be understood in light of additional factors. The frontier surplus flow model suggests that interests of regional and homeland elites need to be taken into consideration.

Elite Interests

Elite interests, whether regional or homeland, dictate that land be put to use to contribute to their accumulation of surplus. This general interest can have any number of implications on specific frontiers ranging from occupying a frontier to fend off other elites, to using a frontier as a safety valve for resisting primary producers at home, to extracting surpluses from frontier production. Generally, from the elite's point of view, frontier land should be used to, minimally, not interfere with and, maximally, contribute to their accumulation of surplus. Thus, elite interests involve a concern over land use.

The following suggests how elite interests in land use changed during the period of hill-town depopulation. The opening decades of the nineteenth century saw the Connecticut River valley operating in the changing British world system. The Connecticut River valley supplied rural products, such as pot ash, pearl ash, staves, hoops, shingles, and foodstuffs (such as grains and packed meat) to the cities of North America and the plantations of the West Indies. Regional elites—the merchants in the valley (Martin 1939) located in the entrepôts of Springfield, Northampton, and Hartford, Connecticut,—mediated and benefited from the flow of surplus rural production. The network was one in which rural producers received British manufactures from merchants in exchange for rural products. Merchants obtained the manufactures with bills of exchange they received when trading rural products to West Indian planters and urban merchants (Martin 1939). The hill-town primary producers were one ultimate source of this surplus by their following of a mixed agricultural strategy, meeting their own needs, and sending a variety of rural products to the merchants.

A number of factors came together toward the end of the eighteenth century and the beginning of the nineteenth century to alter this surplus flow. Among these factors were struggles over political autonomy and economic control between the regional elite of North America and the British homeland elite. Manifestations of this struggle were the American Revolution, the trade embargoes, and the War of 1812. Furthermore, British home-

land elite accumulation strategies shifted from using mercantile strategies based on reexporting tropical groceries (such as sugar) to strategies based on industrialization (e.g., Davis 1973; Martin 1939; Szatmary 1980; Wallerstein 1980; Williams 1944). The sum effect was to reduce the connection between the West Indies and the Connecticut River valley, with the ultimate effect of disrupting the flow of bills of exchange against British manufactures (Martin 1939; Szatmary 1980).

With these changes in world-scale surplus flow, some regional elites in the Connecticut River valley also changed their accumulation strategies. The new strategies involved industrializing the valley and resulted in the location of substantial textile and small-arms manufacturing mills in the lowland towns of, for instance, Chicopee, Holyoke, and Northampton (Deyrup 1948; Shlakman 1935). This change in elite accumulation strategies altered their demands for primary production. For instance, wood for construction of factories, workers' housing, and heating would be in demand. Similarly, food would be required for the growing industrial workforce, and hay for the horses providing lowland transportation. Finally, wool from sheep would be in demand for the textile mills. The change in regional elite accumulation strategies would thus demand new forms of rural production.

What might be the spatial pattern of response to these changes? Thünen models (Chisholm 1962) suggest that more labor-intensive production (such as market gardening) is located near the growing centers while less-intensive production (such as dairy, lumber, or pastoralism) occurs at greater distances. These different land-use zones appear as a series of roughly concentric rings centered on emerging centers. Empirical studies of upstate New York (Conkling and Yeates 1976:49) and of the Connecticut River valley (Paynter 1982) identify the development of these intensification patterns in association with North American development. Thus, a change in the spatial division of labor is expectable with a shift in the nature of elite demands for surplus.

It is clear that elites realized their interests and redirected the production patterns of the valley towards industry during the first half of the nineteenth century. Water-powered factories arose at major power sites (LeBlanc 1969) and industrial centers experienced large population gains (Klimm 1933). What has usually not been considered is the effect of these changing elite demands for surplus on demographic change in towns that did not adopt industry. However, there are good theoretical and empirical reasons for suspecting that changes in elite tactics toward industrialization would also have affected agricultural practices as well. It is here that the link can be made between changing elite interests and the depopulation of the hill towns.

Changing agricultural practices, from mixed agriculture to greater spe-

cialization, have the following demographic implications. Assuming that rural producers lived near their fields, a switch to less labor-intensive production, such as pastoralism or wood or hay production, would create a depopulation of the area, while a switch to more labor-intensive production, such as market gardening or other labor intensive cash crops, would create a population increase. For the hill towns this switch might have been from a mixed agricultural productive base in which surplus rural products were sent to merchants for regional export, to a more specialized, less labor-intensive production base, such as using the land to produce timber and/or animal products. This change in land use, to less-intensive land use, might be responsible for hill-town depopulation. If this is the case, then a shift in productive practices should be associated with the depopulation of the early

Table 8.4
Value of Tobacco per Unit Area (in Dollars)^a

A. TOWN-TYPE STATISTICS (1845 and 1855)						
	County	Northampton type	Hadley type	Hill-town type	Unclassified type	
\bar{X}	45	4.82	17.73	.69	.20	.23
	55	47.58	31.31	446.76	.00	2.60
SD	45	13.33	21.33	.69	.61	.46
	55	126.17	33.55	55.72	.00	5.21
MD	45	0	9.78	.69	0	0
	55	0	18.06	446.76	0	0
N	45	23	6	2	10	5
	55	23	6	2	10	5

B. HILL-TOWN COMPARISONS TO COUNTY MEAN AND MEDIAN VALUES

	Year (1845)	Year (1855)
\bar{X}	Hill Town < County	Hill Town < County
MD	Hill Town = County	Hill Town = County

C. RANK ORDERS OF VARIOUS TOWN TYPES

\bar{X}		MD	
Year (1845)	Year (1855)	Year (1845)	Year (1855)
1. Northampton	Hadley	Northampton	Hadley
2. Hadley	Northampton	Hadley	Northampton
3. Unclassified	Unclassified	Hill town	Hill town
4. Hill town	Hill town	Unclassified	Unclassified

^aFrom Massachusetts state census. 1 = greatest value of tobacco.

nineteenth century. A number of indexes provide some insight on the nineteenth-century land use.

One labor-intensive cash crop that became important in the Connecticut River valley in the nineteenth century was tobacco (Ramsey 1930). Table 8.4 reports data from the Massachusetts census in 1845 and 1855 on this relatively labor-intensive crop (Ramsey 1930). It is clear from Table 8.4 that the hill towns did not adopt tobacco production. Hill-town mean value of tobacco per unit area is less than the county mean in both 1845 and 1855. While the median equals the county median, this is at a value of zero for both years. Of the four town types, the hill towns have the lowest mean and median values of tobacco per unit area produced in both years. On the other hand, the relative importance of tobacco for the Hadley-type towns, just

Table 8.5
Feet of Lumber per Unit Area (Times 10³)^a

A. TOWN-TYPE STATISTICS (1845 and 1855)						
	County	Northampton type	Hadley type	Hill-town type	Unclassified type	
\bar{X}	45	11.74	9.34	27.75	10.42	10.85
	55	20.82	18.17	48.44	20.95	12.70
SD	45	11.23	7.55	19.81	8.86	9.15
	55	15.35	9.98	.62	14.80	12.10
MD	45	10.15	9.99	27.75	9.33	14.58
	55	17.99	17.06	48.44	18.46	4.88
N	45	23	6	2	10	5
	55	23	6	2	10	5

B. HILL-TOWN COMPARISONS TO COUNTY MEAN AND MEDIAN VALUES

	Year (1845)	Year (1855)
\bar{X}	Hill Town < County	Hill Town > County
MD	Hill Town < County	Hill Town > County

C. RANK ORDERS OF VARIOUS TOWN TYPES

\bar{X}		MD	
Year (1845)	Year (1855)	Year (1845)	Year (1855)
1. Hadley	Hadley	Hadley	Hadley
2. Unclassified	Hill town	Unclassified	Hill town
3. Hill town	Northampton	Northampton	Northampton
4. Northampton	Unclassified	Hill town	Unclassified

^aFrom Massachusetts state census. 1 = greatest amount of lumber produced.

Table 8.6
Cords of Firewood Produced for Market per Unit Area

A. TOWN-TYPE STATISTICS (1845 and 1855)						
	County	Northampton type	Hadley type	Hill-town type	Unclassified type	
\bar{X}	45	31.82	42.21	52.01	9.56	55.81
	55	66.90	98.15	87.20	30.17	94.75
SD	45	39.70	57.90	2.01	9.92	34.21
	55	47.38	54.11	7.34	25.13	26.76
MD	45	23.60	24.34	52.01	3.8	45.53
	55	65.73	84.64	87.20	20.78	97.50
N	45	23	6	2	10	5
	55	23	6	2	10	5

B. HILL-TOWN COMPARISONS TO COUNTY MEAN AND MEDIAN VALUES

	Year (1845)	Year (1855)
\bar{X}	Hill Town < County	Hill Town < County
MD	Hill Town < County	Hill Town < County

C. RANK ORDERS OF VARIOUS TOWN TYPES

\bar{X}		MD	
Year (1845)	Year (1855)	Year (1845)	Year (1855)
1. Unclassified	Northampton	Hadley	Unclassified
2. Hadley	Unclassified	Unclassified	Hadley
3. Northampton	Hadley	Northampton	Northampton
4. Hill town	Hill town	Hill town	Hill town

^aFrom Massachusetts state census. 1 = greatest number of cords of firewood.

when their populations began their second growth spurt, suggests that adoption of tobacco or lack of its adoption significantly affected the demographic trends of agricultural towns.

It is easier to characterize what the hill towns were not producing than to generalize about what was produced. However, there is some evidence suggesting that the hill towns were engaged in less labor-intensive production. Table 8.5 reports the mean and median values for feet of lumber prepared for market in 1845 and 1855. Though the county mean and median values are greater than those for the hill towns in both years, by 1855 the hill towns were the second most important lumber producers in the county. Although lumber figures are consistent with the hypothesis that hill-town depopulation coincided with a shift to less labor-intensive land use, Table

Table 8.7
Animal Density (Excluding Humans)

A. TOWN-TYPE STATISTICS (1831)						
	County	Northampton Type	Hadley Type	Hill Town Type	Unclassified Type	
\bar{X}	31	141.68	151.23	136.05	146.13	123.60
SD	31	47.48	44.72	44.00	54.75	26.71
MD	31	130.69	147.60	136.05	140.65	127.53
N	23	6	2	10	5	

B. HILL-TOWN COMPARISONS TO COUNTY MEAN AND MEDIAN VALUES

	Year (1831)
\bar{X}	Hill Town > County
MD	Hill Town > County

C. RANK ORDERS OF VARIOUS TOWN TYPES

\bar{X}	MD
Year (1831)	Year (1831)
1. Northampton	Northampton
2. Hill town	Hill town
3. Hadley	Hadley
4. Unclassified	Unclassified

^aFrom Massachusetts tax valuations. 1 = greatest number of animals per unit area.

8.6 indicates that they were clearly not engaged in producing firewood. So, if the shift to less-intensive woodlots is in part responsible for depopulation, it was not brought about by a switch to directly providing firewood for the lowland towns.

Another less-intensive land use is pastoralism. The mean and median animal density is reported in Table 8.7 for 1831. The hill towns have denser animal populations than the county, and are the second most dense towns in the valley. This measure also supports the notion that hill towns were shifting to less labor-intensive land use in the early nineteenth century.

Conclusions

Although precise characterization of hill-town production awaits further study, it is clear that (1) the area was engaged in some form of production

during the period of depopulation, (2) the new production practices were less labor-intensive than those followed in other agricultural towns, and (3) these changes were consistent with the changing elite interests of this period. It appears that the hill towns were not so much being abandoned as being used differently. This difference was consistent with the change in the area's place within the world system of surplus flows, namely its change from being a semiperiphery producing agricultural staples to support accumulation in urban areas and the West Indies, to becoming an industrial center with a new set of production demands.

This change in world surplus flows means that change in the Connecticut River valley has to be understood as, in part, an attempt by North American elites to preempt British homeland elite's access to surplus. Taking elite interests into consideration by no means suggests that this is the only point of view needed to understand demographic change and frontier development. The social relations of the primary producers, those people responsible for the change in population, and their relations with the local ecosystem also need consideration. There is much more that needs to be done to fully understand the processes of each of the levels and the nature of their interactions. What the above analysis points out is that the entire range of processes found in the frontier model of surplus flow needs to be taken into account; attempts to explain late eighteenth- and early nineteenth-century culture change that focus on only one set of these processes will be insufficient.

CONCLUSIONS

One of the reasons for explicitly laying out the model of frontier surplus flow and the strategies of domination and resistance is to stimulate further research on frontier development. Analyzing frontier change in a number of different settings should provide insight into the mechanisms of large-scale culture change as well as into the theory needed to understand this diversity. Although conducting analyses outside of capitalist settings seems warranted, the New England problem is by no means solved. The analysis of depopulation suggests that the model of frontier surplus flows might provide some insights into broader issues of New England culture change, some of which are discussed in the following.

Conditions of New England Development

The analyses of the depopulation of western Massachusetts point out the necessity of setting this particular frontier in its larger systemic context. This

larger perspective is being used by South (1977, 1978) and Lewis (1976, 1977) in their studies of South Carolina's place in the British world system. However, the dominant interpretive tradition in New England historical archaeology pays primary attention to the larger context of the ideological domain of northern culture (Deetz 1977). A fruitful direction for problem solving in New England would be to consider the larger context for other domains of culture as well. One way to do this would be to use the frontier surplus flow model to analyze the competing interests and alliances responsible for the area's developmental trajectory. Completing such a task is well beyond my present scope. However, some preliminary research suggests that further work is warranted.

A brief perusal of the massive literature on European economic history presents some remarkable correlations between European development and Deetz's three stages for New England. Briefly, Deetz's analysis of the material record uses an early yeoman stage (1620–1660), a folk period (1660–1760), and a period shaped by the introduction of the Renaissance-derived, Georgian mind-set (1760 to early 1800s). The principal explanatory processes are diffusion and cultural drift, with diffusion being responsible for the first and third stages, and drift shaping the development of regional folk cultures in the second. Noting some changes in Europe that coincide with these changes suggests that the political-economic processes of domination and resistance—expressed in the actions of homeland elites, regional elites, and primary producers in New England—also played a part.

Broad European political-economic trends identify the "long fifteenth century" and the "long seventeenth century" (Cippola 1976:231–233; de Vries 1976:2–29; Wallerstein 1974:67–70, 1980:3–34). The long fifteenth century was a period of expansion and economic growth. European colonization of the world began in this period, an expansion based on an economic upswing. Rising grain prices, increasing populations, increasing trans-Atlantic trade volumes and values, and increasing capital accumulation all attest to this growth. The hegemonic powers in the fifteenth century were Portugal and then Spain. The long fifteenth century ends with the spread of an economic downturn throughout Europe. This started in the Mediterranean polities as early as the late 1500s and reached northwestern Europe, and particularly England, by the mid-seventeenth century (Wallerstein 1980:18–25).

The following period, the long seventeenth century, was characterized by economic stagnation (Wallerstein 1980:13–34) or possibly crisis (de Vries 1976:1–29). Northwest European polities, particularly the Dutch and English, did well only in comparison to the rest of Europe. Grain prices, populations, trade volumes, and capital accumulation either leveled off or declined. Economic hegemony was exercised by the Dutch in the mid-seven-

teenth century (Wallerstein 1980:37–71) primarily due to their successful wresting of trade from the Iberian polities. However, the Dutch were unable to establish political hegemony as well, thus the period saw numerous struggles between core states (particularly the Dutch, English, and French) for political supremacy. Political hegemony in the core was established only with the English defeat of the French in the Seven Years War (1763). The rise of Britain to economic, ideological, and political supremacy in the European world stimulated a new stage of world system growth (Wallerstein 1980:75–125, 245–289).

This developmental trajectory for the core, even sketched this generally, has a number of interesting implications for studying the northern colonies. For one, the dates in this scenario nicely coincide with the periods identified by Deetz. Separatist and Puritan colonization occurred while England was still experiencing economic growth. By the second period (1660), England's growth had slowed, and stagnation lasted during Deetz's stage of isolated folk development (until 1760). The ascension of England to core hegemony neatly coincides with the introduction of the Georgian mind-set and associated material culture into the northern colonies.

The coincidence of these periods certainly suggests that the cause of New England development is related to the changes in the European political-economic scene. Exactly how these two trajectories are linked needs further attention. The frontier surplus flow model and strategies of domination and resistance suggest some lines of research that would illuminate these connections. Three issues in particular come to mind.

First, recalling the importance of considering relations between homeland and aboriginal populations leads to characterizing colonization as the successful domination of Anglo land-use patterns over aboriginal patterns. While this ultimately entailed the virtual extinction of Native Americans from New England, during the initial period it involved the substantial articulation of Native American and Anglo interests (Jennings 1975; Salisbury 1982), particularly with regard to the fur trade (Ceci 1977; Thomas 1979). Thus, the primary producers initially included both yeoman farmers and Native Americans interacting with each other and with regional and core elites. Understanding the initial period requires broadening this definition of primary producer and unraveling the flows across these ethnic boundaries. I suspect that the Anglos will look less like yeoman, and the Native Americans less like an aboriginal culture once this is completed.

A second point of potential research concerns the folk period. This period is considered as one in which the northern colonies develop in relative isolation from core interests, an isolation brought on by benign neglect. Some characteristics of the second period suggest that more than relative isolation, or benign neglect, were at work. For instance, evidence in the

material record for continuous flows of items across the Atlantic, and evidence that New England elites accumulated surplus by moving New England products throughout the Atlantic economy, attests to the continued importance of homeland–frontier relations (Bailyn 1955; Innes 1978). One way to accommodate the evidence for cultural divergence with evidence for continuous contact is to consider this as a period of successful regional resistance of core surplus extraction. Development elites and primary producers forged alliances that succeeded in redirecting surplus flows for the improvement of their material conditions. These improvements are seen, for instance, in the improvement of housing in the area (Carson *et al.* 1981), the development of interregional marketing networks (Friedmann 1973), and the development of social stratification (e.g., Innes 1978; Main 1965). Specifying the material conditions of this successful resistance requires more attention.

Third, considering the second period as one of successful regional resistance, rather than as isolation, helps set the stage for the third period, the reintegration of New England into broader European cultural tradition. A paradox in present conceptions of this period is that just as ideological hegemony, in the form of the Georgian mind-set, was reestablished over the area, the region vehemently rejected attempts to reestablish political, economic, and symbolic hegemony. Regional rejection was a realization of the interests that dominated the past century—those of development elites and their allied primary producers. The Georgian mass culture represented the fact that British elites, having favorably resolved problems in the core, could reassert some form of control over the nature of surplus flows in New England. Due to resistance the nature of this control took on a new form. Rather than following a colonial strategy in which political and ideological control established the basis for surplus extraction, the third period might better be understood as the realization of a neocolonial strategy in which economic control was the basis for political and ideological hegemony (Amin 1980:138–139).

These are but a few of the possible research avenues suggested by contemplating the correlation of Deetz's temporal stages and broader trends in European economic history. The depopulation example clearly points out that successful interpretations of New England's development requires setting the ecological context as well as addressing the interests of a broad range of actors. Whether the preceding suggestions prove tenable awaits further research. That the issues are worth addressing is clear. One payoff is understanding why and how one colony escaped the trap of underdevelopment and rose to hegemony in our present world. Understanding this would contribute to Deetz's (1977:158) goal of discovering the origins of the modern world, a truly anthropological issue.

Summary

Frontiers are best understood as sets of relations. This study has reviewed the relations between frontiers and homelands. Depending on the nature of these relations, frontier and homeland trajectories can lead to the development of clonal and clinal supraregional landscapes. In the former, the frontier develops into a variation of the homeland culture. In the latter, either the homeland effectively underdevelops the frontier, or the frontier turns the tables on the homeland and becomes the cultural core. Techniques are certainly available to archaeologists to identify when an area stands in a frontier-homeland relationship to another area. The problem we face is primarily one of developing theory to account for these supraregional relations.

One framework for addressing why frontiers develop as they do is the model of frontier surplus flow. Taking into consideration ecological relations as well as the interests of the primary producers, regional elites, and homeland elites allows one to describe how surpluses flow in the area. Understanding surplus flow, by assessing the relative success of each level's strategies of domination and resistance, provides an important insight into why development follows a specific trajectory. The example of change in population size of the hill towns of western Massachusetts points out the utility of considering these various levels as well as noting the correlations between Deetz's stages and general patterns of European economic change. Not the least indication of the usefulness of this approach is the variety of different research problems and perspectives that it suggests.

Finally, archaeology should be concerned with understanding the social relations underlying the different development trajectories of frontier areas. We have a battery of techniques to pursue these issues. Furthermore, it is increasingly apparent that all forms of cultural systems are influenced by factors emanating from outside the regional system. Understanding frontier-homeland relations provides an understanding of one form of these large-scale interactions, and thus insight into one of the major factors conditioning cultural similarity and difference. Moreover, the variety of homeland-frontier relations is greatest in the archaeological record. Ethnographic and ethnohistoric records principally reveal the workings of capitalist core-periphery relations. Historical archaeology of European societies can contribute to an understanding of the variety of relations found within the capitalist world system. These will become even clearer when set in the comparative context generated by studies by prehistorians of long distance relations in noncapitalist societies. With this information, frontiers will be understood in a truly ethnological, broadly theoretical perspective.

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