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**Economic Crisis and the Incorporation of New Migrant  
Sending Areas in Mexico: The Case of Zapotitlán  
Salinas, Puebla**

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## Introduction

This paper examines the process by which one rural town in south-central Mexico was rapidly transformed into an international migrant sending community over the last twenty years. In marked contrast to reports from Western Mexico where international migration experience in the adult population was accumulated over many decades, the prevalence of migration experience rose in accelerated fashion over the course of just two decades in Zapotitlán Salinas, Puebla. In the mid-1980s, some villagers from this town set out for New York City in order to *salir adelante*, do well for themselves, in the hopes of improving their standard of living in Mexico. By the mid-1990s, the local impact of Mexico's deepening economic crisis, the state economic policies implemented to counteract the crisis, and other local and regional factors virtually destroyed the town's onyx industry, eliminating most local sources of employment. These changes rapidly converted international migration into a necessary economic alternative for a growing number of Zapotitecos. Increasing levels of consumption and consumption expectations among villagers reinforced individuals' decisions to migrate, particularly in the context of worsening economic and social conditions in Mexico.<sup>1</sup>

The case of Zapotitlán illustrates how the process of accelerated migration and the extension of international migration into new sending regions were constituted and experienced locally and related to changes in state economic policy. The development of international migration in the town into a necessary economic alternative was a result of the changes in broader social and economic policy as they articulated with local economic and social relations. Framing the analysis in this manner, I explore how the historical dynamics of capitalism in one corner of south-central Mexico played a fundamental role in shaping the timing and configuration of migration to the United States. I advance this argument in order to lead our thinking away from what some scholars have suggested as the "inevitableness" of migration in the current neoliberal era (see discussion in Binford 2003) by focusing on the particular configurations of capital and labor in a specific time and place, and drawing attention to the contingencies of these arrangements.

## Diversification of Migrant Sending and Receiving Regions

The principal focus of international migration research in Mexico has been the historic sending states of Western Mexico (Guanajuato, Jalisco, Michoacán, Zacatecas) (Goldring 1992; Massey, et al. 1994; Massey, et al. 1987; Mines 1981; Reichert 1982; Wiest 1979). Incorporated into migration circuits beginning in the late 19<sup>th</sup> century, workers from this region were destined primarily for agricultural work in the western and mid-western United States (Palerm and Urquiola 1993). Over the last several decades, however, the migration process has diversified both in terms of the origins and destinations of migrants. States in the center, center-south, and east of the country—the Federal District, Puebla, Veracruz, Guerrero, Oaxaca, Yucatan—have been rapidly transformed into sending areas (Adler 2004; Binford 2004b; Cohen 2004; Marcelli and Cornelius 2001). At the same time, U.S.-bound migrants have branched out from agricultural work into industrial and service work in urban and suburban areas in the Northeast and Southern United States (Binford 2004a; Binford 2005; Canales 2002; Smith 2001; Zuniga and Hernandez-Leon 2005). While international migration from Puebla's Mixtec region started during the 1950s (Smith 2001), regions in the rest of the state, including Zapotitlán, were by and large incorporated into migration circuits in the 1980s and 1990s (Binford 2004b; Carpena Mendez Forthcoming). Further, Zapotiteco migrants were not destined for traditional migrant receiving areas in the United States nor the traditional labor markets in agriculture. Instead, villagers formed part of the recent wave of Mexican migration

into New York City filling jobs in restaurants, construction, domestic work and other service industries (Smith 2001).

The simultaneous diversification of both sending and receiving areas is related to broad political and economic transformations implemented by Mexico and the United States to deal with economic crises since the 1970s.<sup>2</sup> Alejandro Canales outlines how Mexico's leaders confronted economic crisis with changes to the organization of production marked by policies of economic liberalization, the loosening of the rules for hiring and firing, employment and salaries and industrial relations, and the development of export substitution (Canales 2002, p.50). The labor instability, salary reductions and loss of employment that resulted from these transformations made it more and more difficult for rural and urban Mexican households to reproduce themselves (Gonzalez de la Rocha 2001). These new production conditions led more Mexicans outside the historic migrant sending areas of Western Mexico to migrate to the United States in search of work, a process which accelerated with the peso devaluation of 1994 (Binford 2004a; Binford 2005).

While changes in the organization of production were a key factor in the creation of new migrant sending areas in Mexico, they were also important in the growth of the need for unskilled workers in the United States. Canales argues that economic restructuring in the United States in response to crisis involved the polarization of the workforce into a select group of highly-skilled, well-paid workers and a great mass of unskilled, low-paid workers occupying marginal places at the bottom of the labor market. These are the spaces that are generally filled by new immigrant arrivals from Mexico and elsewhere (Canales 2002; Gledhill 1995; Smith 2001; Zlotniski 2005)

I attempt to explain the emergence and acceleration of international migration in Zapotitlán as the outcome of the interplay between these broad structural changes and the specific historical and social relations present in the town. I start by specifying how Zapotitlán was drawn into a national and international commodity industry, which reconfigured local ecological, economic and social relationships (Harvey 1989; Roseberry 2002). The extraction and sale of travertine and marble from local quarries along with the processing of the rock into various products for national and international markets formed the major economic activity in the community until the early 1990s. During the height of the industry, from the mid-1970s to the mid-1980s, petty commodity production and petty capitalist production dominated economic life in the town (Cook and Binford 1990).<sup>3</sup> Toward the end of this period, principally young, unmarried men began to leave for the United States seeking wage work in the Bronx section of New York City. The relations of production in the onyx industry delayed migration from the community when other regions of Puebla's Mixtec region were experiencing high-levels of out-migration (Smith 2001). The eventual decline of the national and international industry, combined with the local impact of restructuring and continuing crises in the broader Mexican economy, led to the fall of the town's industry from the marginal space it had occupied within the regional onyx industry. Relegated to the periphery of capitalist development, the majority of Zapotitlán's workshops went bankrupt and closed. Migration became a necessary alternative for individuals and households without local sources of income.

Some recent research on sending communities of southern Mexico is more narrowly trained on how households and individuals incorporate migration into diversified economic strategies, strategies which combine international and domestic migration, urban wage labor, petty commodity production, subsistence agriculture and other activities that increase the chances that households members' basic needs and consumption expectations will be met (Adler 2004; Cohen 2001; Cohen 2004). The strength of this work has been to put a human face on the

migration process by illustrating how informants negotiate the difficult conditions they face whether they decide to stay or migrate. This research illustrates the ways in which poor Mexicans are rational actors, weighing their limited options while attempting to plan for an uncertain future. A local focus on households and individuals is a necessary complement to the broader discourse on migration, remittances and development because it highlights the experience and meaning of migration and the use of remittances in the contexts of peoples' daily lives.

However, this work fails to examine the role of changes in the broader political economic context in contributing, along with other factors, to declines in local conditions and a subsequent increase in international migration. While this research illustrates how individuals and families cope with economic crises and community members make the best of a difficult situation, it often does not clearly specify what has made life so difficult in the first place. In other words, the analysis elides an explanation of the conditions that transformed international migration into a necessary alternative for a large number of rural and urban Mexicans. By not attending properly to the analysis of these conditions, we cannot understand the historical development of migration in specific times and places.

The ethnographic data presented here does not contradict the notion that individuals are resourceful and creative in their economic pursuits, because this is precisely what they *must* be in order to produce and reproduce given the worsening economic conditions that most communities have experienced. Mercedes González de la Rocha effectively argues that the ability of urban households to employ a strategy of work intensification to survive through economic crisis, has reached its limit. Urban middle-class and poor households in Guadalajara face the difficult task of reproducing themselves within the context of shrinking labor markets and formal and informal income-generating opportunities, conditions which developed as part of the economic and social restructuring based on the free-market development strategies (Gonzalez de la Rocha 2001). Leaving the analysis at the point of describing how households and individuals manage difficult times leads to a sense that migration itself was *inevitable* or a natural outcome of demography, technology, the growth of social networks, etc. Instead, by focusing on one case study, I attempt to situate households' and individuals' actions as shaping and responding to the effects of restructuring and crisis. I show how migration became a necessary economic alternative in Zapotitlán by focusing on the interaction between the local struggle over resources, changes in consumption behavior among villagers, cuts in state subsidies, and changing markets for petty commodities. By doing this, I hope to make a small contribution to our understanding of the variable and contingent way that new migrant sending areas are incorporated into migrant circuits as a result, in part, of neoliberal economic policies.

Finally, without a historically-informed understanding of the migration process, it is difficult to assess the future prospects of rural communities incorporated into migrant circuits. Whether remittances stimulate economic development in rural areas or lead to increased dependence on continued migration has been an important theme in migration studies with scholars and public figures providing evidence to back both sides of the debate. This has become especially salient as remittances have surpassed tourism revenues and foreign direct investment to become the Mexican economy's second largest source of external finance after oil {Hernandez-Coss, 2005 #795, p.4}. As Binford has argued, these evaluations of remittances and rural development have largely ignored the structural conditions that weigh against rural development in Mexico (Binford 2003). I present preliminary evidence from Zapotitlán that suggests there are few productive investment opportunities for migrants' remittances in the town. As a result, Zapotitecos' improved standard of living achieved through migrants' earnings in the United

States remitted back to Mexico can be maintained only through continued migration, a vicious cycle Joshua Reichert called the 'migrant syndrome' (Binford 2003; Reichert 1981).

In addition to the political economy approach, this paper is informed by themes from political ecology, particularly the relationships between the control and exploitation of natural resources, and how they shape and are shaped by social and political organization (Greenberg and Park 1994; Sheridan 1988; Wolf 1972). The mining of local onyx quarries was an important stimulus to local capitalist accumulation and the development of the onyx processing industry. Land tenure played a key role in the manner in which quarries were managed, and, as a consequence, the potential of Zapotitlán's workshops. The relationship became clear through a comparison of Zapotitlán's onyx industry with that of San Antonio Texcala, a neighboring town that took a slightly different development path. Here, I attempt to link quarry exploitation with an analysis of commodity production in order to bring into focus the dialectic of local ecology, productive activity, and the distribution of power. I do this in order to make a small contribution toward our understanding of what Marx called the "interdependent metabolic process linking nature and society" (Foster 2000a, p. 158), which Burkett suggests should be understood as "socially mediated in historically specific ways" (Burkett 1999, p.17; see also Patterson 1994). This allows us to move away from the tendency in political economy to "reduce everything to social constructions, blatantly disregarding all that is not human," (Greenberg and Park 1994, p.1), and helps us in "avoiding crude materialist –whether technological determinist or naturist– conceptions of social reality as being naturally predetermined," prevalent in ecological analyses (Burkett 1999, p.17). In this discussion, I aim for a fuller appreciation of nature-society interactions in capitalist regimes by locating the analysis between these two extremes. I return to these issues in the conclusion.

## Description of Research Area<sup>4</sup>

Zapotitlán Salinas is located approximately 30 km southwest of the city of Tehuacán, Puebla, along the Tehuacán-Huajuapán highway in the southeastern portion of the state of Puebla. In October 2003, 2,713 people lived in Zapotitlán; and an additional 500-700 men, women and children from Zapotitlán are estimated to reside in the United States, principally in New York City.<sup>5</sup> Zapotitlán, the municipal seat of the municipality by the same name, is situated in a semi-arid basin of the Tehuacán Valley dominated by columnar cacti and thorn-scrub desert brush. The vegetation thrives on a minimal amount of annual rainfall (<400 mm) at irregular intervals and soil comprised principally of gypsum and limestone. Since the 1990s, Zapotitecos have lived principally from remittances sent from family members working in the United States. Prior to migration, families earned their living from participation in several local commodity industries: salt, livestock, onyx, ixtle, charcoal and embroidery.

Despite the dry appearance of the landscape, both fresh water and salt water springs abound in the valley. Salt water has been employed for at least 2,000 years in the production of salt through evaporation (Castellón 2000); salt production continues to be an important source of income for a portion of the local population. Owners of *salinas*<sup>6</sup> and the men who are paid to work in them for a wage or for a portion of the salt are generally non-migrant males over the age of 45. Two types of salt are produced from the same process of evaporation, and have been sold throughout Puebla, Veracruz and Oaxaca during the last century. One type, *sal tierna*, is used for human consumption, while *sal de ganado* or *sal de arrobas* is for livestock use, particularly for fattening animals prior to butchering and preparing them for consumption.

Raising livestock, principally goats, for sale in local and regional markets was an important source of capital accumulation. Properly cared for, goats multiplied in number as did the initial

investment in them. In some cases, money earned from livestock was used to purchase *salinas* and onyx quarries, or to finance a store or capitalize an onyx workshop. At the present time, goats are typically short-term saving opportunities, instead of long-term investments. A family may “save” money by purchasing 3 or 4 goats which are sold off to pay for medical expenses or festive events.<sup>7</sup>

Although archaeological evidence reveals extensive agricultural production in the pre-Conquest era throughout the basin, prevailing ecological and social conditions prevent significant cultivation of subsistence or commercial crops. Instead, fresh water has been used principally to maintain several thousand head of livestock and supply the population with water for daily use. According to oral accounts by community members over 50, *ixtle*<sup>8</sup> and charcoal production were minor, yet important industries, involving the participation of families who were involved in day work in the *salinas*, quarries or the few agricultural fields in the valley. The sale of these commodities, both in Tehuacán and to the south-west, in the Mixteca region, in effect, supplemented the income earned from other local industries and the limited agricultural production for own-use.

Beginning in the 19<sup>th</sup> century and extending until the mid-20<sup>th</sup> century, Zapotitlán was an important market center in the Mixteca, a point of sale for meat and salt produced in the region and supplies brought from Tehuacán, a 6-8 hour walk from town.<sup>9</sup> It was also a stop over point on the mule journey from the Huajuapán, Oaxaca, area, deep in the Mixteca, to Tehuacán, and, as a consequence, had several large hotels to host both merchants and mules. While an elite class controlled the *salinas* and thousands of goats, humble shepherds and *salineros* made up a working class that lacked access to capital to begin their own store, collection of livestock, or access to the salt production apparatus.

These commercial and class relations survived the Revolution and shaped social life into the middle of the 20<sup>th</sup> century. From 1940-60, while the Bracero program stimulated international migration in other areas of Mexico (Massey, et al. 1987), salt production and ranching formed the basis of economic life in Zapotitlán. Few individuals migrated outside the community during these years. The Mexican Migration Project's Ethnosurvey, administered to a twenty-five percent random sample of households in Zapotitlán, recorded 15 individuals who migrated between 1940 and 1960. Four worked in corn and sugar cane haciendas in the Tehuacán Valley, Veracruz and Morelos, two worked as domestics in Puebla and Mexico City, and several more worked in construction or small businesses in these urban areas.<sup>10</sup> Informants reported that several families left Zapotitlán and settled permanently Tehuacán, the city of Puebla or Mexico City. However, there was no movement of individuals or families to the United States.

Over millions of years, deposits of petrified salt water formed veins of travertine, commonly referred to as “onyx”.<sup>11</sup> While these deposits were quarried as early as the late 19<sup>th</sup> century, they were not exploited to a significant degree until the 1960s. At first, the rock was extracted and sold in crude form to workshops in Tehuacán, Tecali de Herrera, Puebla and the city of Puebla. Beginning in the late 1960s, local residents opened workshops in Zapotitlán, manufacturing a variety of products including arts and crafts and construction materials. The onyx industry grew quickly and replaced ranching and salt production as the number one source of income in the pueblo.

At the industry's peak in the mid-1980s, residents began to leave Zapotitlán in order to seek work in the United States. This process began slowly at first, and then accelerated rapidly after the early 1990s, as the local onyx industry all but collapsed and Mexico's deepening economic crisis limited local and regional investment opportunities. Despite the increasing risks of illegal

border crossings, greater numbers of men, women and children made their way north through the 1990s and into the new millennium. Today, telephone calls, emails, home videos, remittances and packages traverse thousands of miles to connect community members on both sides of the border, reflecting the spatial separation of production and social reproduction symptomatic of the configuration of capital and labor in the US-Mexico context (Kearney 1991; Portes 2000).

## Historical Development of Social Relations Governing Quarry Control

Understanding the development of the local onyx industry requires a discussion of the land tenure system underpinning control and access to the onyx quarries. During the colonial era, successive generations of a family of *caciques*, political bosses, administered Zapotitlán's territory, an extension of land that closely corresponds to the present-day boundaries of the municipality of Zapotitlán. The *caciques* organized tribute payments to the church and defended the town's lands against disputes with neighboring *cacicazgos*. Due to numerous boundary disputes in the 19<sup>th</sup> century between Zapotitlán and neighboring haciendas and pueblos, the last in line of these *caciques* sold portions of his vast holdings. In 1851, a group of Zapotitlán residents bought 24,000 hectares from the *cacique*, forming what would become the *bienes comunales*, common property, of the community of Zapotitlán Salinas (see below).<sup>12</sup> By 1886 this group had formed the Agricultural Society of San Martín Zapotitlán Salinas, and, by virtue of the land purchase, claimed exclusive ownership of virtually all the resources within the territory. The Agricultural Society likely included both large landowners and small-holder and landless peasants and shepherds. While some residents farmed in the area by harnessing water from perpetual fresh water springs, the basis of the economy was the production of salt and the raising of livestock, particularly goats, and the preparation and sale of meat throughout the Mixteca and in the main regional market in Tehuacán.

The members of the stratified Agricultural Society were henceforth incorporated as *comuneros*, commoners, –entrusted with the administration of their common property through customary use and community tradition. It is clear that from the beginning, *comuneros* did not have equal access to the key resources within the Valley of Zapotitlán. While thousands of hectares of pasture land were available for livestock grazing, fresh and salt water –the latter key to the lucrative production of salt- were concentrated in a few areas. The picture that emerges from the 19<sup>th</sup> century is the establishment of a communal land trust, most of which was used as pasture and managed collectively. The most important resources, however, appear to have had private owners and were managed as private property within the communal lands.

While no major battles were fought in the region during the Revolution, the town experienced a major population reduction as families fled from Carranzista forces winding their way through the Mixteca in search of military recruits, women and food. Epidemics took their toll on the remaining population. In the long run, however, the class structure persisted, as the wealthy landowners who survived the Revolution retained control over water and salt resources.

Beginning in the late 1920s, neighboring communities applied for and received ejido land grants through the Agrarian Reform program. The State expropriated land from Zapotitlán's communal land trust to create the ejidal land holdings along its borders. Many of these communities had disputed their boundaries with Zapotitlán since the colonial era (see above), and, despite the ejidal land grants, continued to invade Zapotitlán's territory and demand more land. These constant disputes were the principal factor leading the community to seek official incorporation into the Agrarian Reform system. On October 14, 1964, the Secretary of the Agrarian Reform

Office in Mexico City signed the paperwork that officially incorporated Zapotitlán's lands into the national land tenure bureaucracy. Once officially incorporated, any change in the boundaries of Zapotitlán's bienes comunales would have to be approved by a presidential decree.

The individuals and families that maintained control over salinas, quarries, and irrigated agricultural fields attempted, unsuccessfully, to exempt their holdings from inclusion in the town's bienes comunales. Instead, all of Zapotitlán's 24,000 hectares were incorporated as bienes comunales, and administered as such under the relevant federal agrarian reform legislation. In practice, however, the comuneros respected these large land holdings as private property and sought neither to redistribute nor invade the fincas. The fincas' "owners," wealthy absentee members of the Tehuacán elite, continued to administer their holdings at their discretion.

### **Onyx Quarries: Mining and Distribution of Primary Material**

The whole thing was out of control. They took rock out without thinking about the future. They tried to use it all up, thinking the whole hill was a vein of onyx. It was overexploitation, because there was no organization for working the rock. (SMB, workshop owner, interview 2 February 2004)

The most extensive deposits of onyx were located beneath some of the clusters of salinas that were managed as private property. Until the 1960s, mining in Zapotitlán's onyx quarries involved the extraction of small blocks of stone that could be hauled to Tehuacán by burros. It was difficult to extract rock in larger quantities because the road connecting Zapotitlán to Tehuacán, the most important market for the sale of raw material, could not support heavy truck traffic until it was widened and paved in 1959. Because salt production remained a profitable business, and extensive quarrying would require the destruction of salinas at the surface in order to extract the subsurface onyx, finca owners continued to focus on producing salt and extracted only that onyx close to the surface, which caused minimal damage to the salinas. Until the extension of the power grid to Zapotitlán in the 1960—which would provide the means to power stone cutters, grinders and polishers—local quarrymen had no possibility of developing a local onyx processing industry (see below).

Quarrying began slowly at the beginning of the 1960 to 1980 period, then accelerated. While some individuals petitioned the *comisariado*, the official in charge of the bienes comunales, for access to small to medium-sized quarries, the most extensive onyx veins belonged to the absentee-elite finca owners, who extracted, as mentioned above, that onyx that was nearest the surface and required little destruction of the salinas, which continued to supply a large portion of their income. However, this process should not be considered as small-scale extraction, at least on the individual quarry level. The owner of a quarry in Miahuatepec, a large cluster of salt crystallization ponds and quarries located on a hill side approximately 8 km from town, reported extracting 75 tons of rock a week over the course of 7 years, until the quarry was exhausted.<sup>13</sup> However, because few individuals had the customary use rights to extract stone during this period, it is clear that Zapotitlán supplied a relatively small proportion of the onyx flowing into the regional market in Tehuacán.

Within this climate of increasing capital accumulation of a few finca owners, it is not surprising that the respect of customary use rights that community members observed for the absentee-elite owners' property eventually came to an end. The first of the large fincas to be expropriated was Miahuatepec. In the early 1980s, a group of men, aged 25-40, rallied the comunero

membership to take over the Miahuatepec fincas “for the pueblo.” Invoking the 1964 incorporation of the bienes comunales, they declared that the so-called owners of the salinas and quarries of Miahuatepec were not members of the community, were not recognized as comuneros in the general assembly, paid no *faena*, monetary contributions to community treasury, to the comisariado, and therefore, had lost the right to use land that belonged the community. The salinas and quarries were to be left to the pueblo, specifically to the office of the comisariado, and managed “for the good of the pueblo.”

This group’s power and influence developed independently of the absentee-elite, principally as successful onyx workshop owners during the first fifteen years of Zapotitlán’s onyx processing industry (1966-81, see below). Engaged in producing onyx blocks used in flooring, trophy bases or figurines, these men were part of a local petty capitalist class, with large workshops employing 10-20 workers.<sup>14</sup> As their businesses expanded during the time period, owing to high demand in national and international markets, they came of age politically as well. By the late 1970s, members of this group controlled both the municipal presidency and the Comisariado de Bienes Comunales. From these positions of power within the community, and by invoking a populist rhetoric to appropriate the town’s resources “for the pueblo” from an absentee elite class whose interests were tied to Tehuacán, they successfully orchestrated the take-over of the large fincas.

Despite lawsuits filed by the absentee elite, this petty capitalist class leveraged their authority within both the Comisariado and the municipal government in the administration of the salinas and quarries. They controlled the most extensive onyx veins of the confiscated finca, and extracted faenas from comuneros who quarried and produced salt in adjacent sections. The faenas were officially destined for a communal fund to support community development projects, and indeed, the town plaza and municipal offices were built during this time, reportedly from communal faenas. However, it was well-known that the administration of Miahuatepec disproportionately favored the individuals associated with the Comisariado and the municipal government.

A year after the Miahuatepec take-over, another large finca, San Pedro, was expropriated, and approximately 80 comuneros received titles to sections of the property<sup>15</sup>. The division of the large fincas into smaller sections resulted in the destruction surface salinas in order to quarry the subsurface veins of onyx. Comuneros, both quarry owners and non-owners, describe this process of onyx extraction as “overexploitation,” where the rock was taken out as quickly as available technology allowed. Onyx’s relatively high market price from the 1960s through the end of the 1980s cannot in itself explain the speed with which owners extracted it from the quarries. As one informant explained, “They were in a hurry because they weren’t the owners!”<sup>16</sup> However, it was precisely the legal ambiguity of the property rights of both the absentee-elite and the comuneros that delayed a decision from the federal agrarian authorities.<sup>17</sup> For several years, while lawsuits were filed by the former owners to recover their fincas and counter-lawsuits filed by the comuneros to defend their right to administer communal land, the state remained silent on the matter. In the meantime, the climate of uncertainty compelled the comuneros to hire more and more laborers to increase the rate of extraction, a process which led to the exhaustion and abandonment of most quarries by the end of the 1980s and beginning of the 1990s.<sup>18</sup> Eventually the state decided in favor of the comuneros. However, by that time, the majority of the rock was gone.<sup>19</sup>

Informants detailed numerous problems associated with this process. First, owners of large quarries employing 15 to 20 workers sold the majority of the rock to workshops in Tehuacán, Tecali de Herrera and Puebla. Transporting the rock outside the community reduced the

availability of raw material for local processing into finished goods. Quarry owners often sold the highest quality onyx in regional markets, where the material fetched higher prices than in local ones. Vendors selling to relatives, compadres, or neighbors were often obliged to discount the market price of onyx because of the prevailing reciprocal relations among community members. Further, the small percentage of onyx that did find its way into local workshops was not sold on a “free market.” Several informants reported that quarry owners restricted the sale to some workshop owners, particularly those located at opposite ends of the political spectrum from the local official leadership, or those who competed directly with the workshops of the local elite.

Third, the rock was removed by exploding dynamite into holes drilled in onyx banks which resulted in the rock being broken up into a few large and a great number of small pieces. The limited number of large pieces restricted the types of products that could be manufactured from the rock. By the early 1990s’s, the majority of the rock had been removed. The remaining banks of onyx were difficult to safely extract given the available technology and required a level of capital investment beyond the reach of local quarry owners. The scarcity of rock drove up the price of primary material, increasing the cost of production for local workshops already experiencing economic troubles.

From this vantage point, we obtain insight into the quarry “overexploitation” discourse invoked by residents of Zapotitlán. Residents make reference to the overexploitation of the quarries particularly when they compare their situation to that of San Antonio Texcala, a neighboring town with an ejidal organization located mid-way between Zapotitlán and Tehuacán. Authorities in San Antonio parceled out access to the onyx and marble quarries to 52 registered ejidatarios, who, beginning in the 1960s, agreed amongst themselves to have only two workers extracting rock in each quarry at any given time.<sup>20</sup> Their objective was to control the supply of onyx to national and international markets in order to maintain a high price for their raw material.

Although the extraction of rock from Zapotitlán’s quarries has slowed to a mere trickle, San Antonio’s quarries are still being exploited, employing local workers and providing significant income for quarry owners. San Antonio’s onyx commands 1,500-2,000 pesos per ton on the market, compared to 500-600 pesos per ton for all types of marble used in art and craft production.<sup>21</sup> In addition, several successful onyx workshops and onyx arts and crafts stores line the highway through town. Zapotitlán’s residents look upon San Antonio’s reduced yet stable onyx industry as an alternative future which was never developed in their town. Although many from San Antonio have also migrated to the United States, Zapotitecos lament the manner in which their local quarries were exploited and wonder whether international migration could have been stemmed if the industry had been organized differently, on a slower, more controlled basis.

During the heyday of massive extraction, the sale of rock fueled the accumulation of wealth among those comuneros with access to quarries and underpinned the growth of the onyx processing industry in Zapotitlán by generating the capital required to establish and maintain them. Zapotitecos claim that the town experienced a “golden era” during the 1970s and 80s when even the poorest families could afford shoes (as opposed to leather sandals), the village patron saint’s festival grew in popularity throughout the state, and the town sponsored two competitive baseball teams, coached by a hired staff paid for by the local elite. On the other hand, informants conceded that the political arrangement that grew out of this local development and persists into the present has stifled the community’s political life. Despite the decline of their principal economic base, members of the petty capitalist class continue to control both the comisariado and municipal government, rotating members through the offices,

and thus ensuring that only their interests will be served. Many informants explained that the inability of the local leadership to offer solutions to the sharp economic decline in Zapotitlán, the beginning of which coincided with the peso devaluation of 1994, is an important factor in the growing incidence of migration to the United States.

### **The Local Onyx Processing Industry**

The arrival of electricity to Zapotitlán in 1966 made it possible for the first onyx workshops to open. That same year the first three onyx workshops were established by persons who had learned the craft and business administration while working as employees in workshops in Tehuacán. Start-up capital came principally from the sale of rock from quarries, or less often, the sale of salinas or a substantial amount of livestock. Subsequent businesses that opened were established by former employees of these first workshops, often from savings and/or advances from clients.

During the industry's first years, workshops processed only onyx from Zapotitlán's quarries. However, as the village established itself as a serious competitor in the onyx arts and crafts business and the number of orders grew, workshop owners purchased different colored marble in order to diversify the product line and meet the needs of buyers constantly looking for new products.<sup>22</sup> The types of products made by Zapotitlán's workshops varied significantly; some workshops specialized in small pieces such as pipes, jewelry boxes, wind chimes, and figurines, while others produced larger goods such as trophy bases and chess sets. Informants suggest that the majority of onyx processing in Zapotitlán was oriented toward the production of *terrazo*, blocks of onyx cut for the manufacture of onyx flooring, or *granito*, small onyx pieces used in the manufacture of mosaic flooring (*mosaico*).

In a typical wind chime workshop, workers first cut the primary material into square blocks and then into thin sheets, both actions performed with the aid of a saw. This machine uses a 16-inch diamond tipped disk, and runs off of a minimum 7.5 horsepower electric motor. The thin sheets are then marked with patterns (typically stars, angels, butterflies, coyotes, etc., 4-5 cm in length), and holes –through which a plastic string will be passed to tie the wind chime together—are made in each of the pieces with an electric drill. The patterns are cut out of the thin sheets using a smaller cutting machine (minimum 3 horsepower motor) equipped with worn diamond-tipped disks. Rough edges are smoothed with a polishing disk and the pieces are further polished with sulfuric acid. Finally, they are sorted into sets (a round base and 10 figures), tied, wrapped into newspaper, and carefully packed into boxes to be delivered to the client.

In the past workshops ranged in size from small, household-based enterprises with one machine and two workers to petty capitalist enterprises with seven or eight machines and as many as 20 workers. Until the late 1980s, the majority of employees were residents of Zapotitlán. Men and boys (as young as 8 years old) were employed to haul and cut rock, while women and girls generally worked as unpaid household labor to polish cut pieces, assemble products, and pack the finish product.<sup>23</sup> Workers were typically paid piece-rate for their work, and some former employees complained that it was not uncommon for employers to withhold a portion of a worker's weekly earnings in order to ensure, within the highly competitive local labor market, that the worker would return on Monday, and begin work on the next week's orders. Once satisfied with the progress made in the beginning of the work week, employers distributed back wages to their employees, typically on Tuesday or Wednesday.

Workshop size varied over time, owing to the interplay of product cycles and the amount of time a workshop had been in business. As the demand for a particular onyx item grew, owners hired in additional workers so as to raise production levels to fill the growing number of orders. As product demand cycled upward, new workshops dedicated to producing the item appeared; they often started with a few employees, but within a few months grew to their maximum size, which they maintained until experiencing a sharp decline in demand. Some workshops then closed, while others maintained minimal levels of production by reducing the number of employees to between 1-3 and/or utilizing household labor.<sup>24</sup> Growth in individual workshop size and in the number of new workshops was facilitated by credit, in the form of advance cash payments, offered owners by clients. As the demand for certain craft items fell, credit dried up and buyers paid in checks dated 3-4 weeks after merchandise delivery.

The number of workshops grew to 110 in the late 1980s and fell sharply after the 1994 peso devaluation. In April 2004, I counted 23 workshops still in operation, all with a reduced number of employees: the largest workshop (a mill, a workshop that grinds onyx into small pieces used in the manufacture of mosaic flooring) still employed 4-5 workers, while the majority of workshops (principally wind chime and figurine workshops) employed between 1-3 workers, including the owner and one or two family members or hired workers.<sup>25</sup>

The types of products manufactured in Zapotitlán's workshops were controlled by national and international "clients" who, in the early stages of the industry, arrived in town and negotiated directly with workshop owners. The majority of the clients were based in Tehuacán, and bought crafts from various regions in southern Puebla and northern Oaxaca. They then sold the merchandise in bulk to intermediaries in tourist centers in Mexico or in the United States. Buyers requested specific quantities of certain products, often bringing models and pictures with them so that workers could begin practice making them according to the specifications. When the number of workshops grew, buyers selected certain owners to organize local production, delegating portions of the orders to various workshops and ensuring that the order would be filled within a predetermined time frame. At the industry's peak, buyers generally came to town to pick up the merchandise. When the demand for products decreased, workshop owners had to deliver their products to buyers' stores in Tehuacán or Mexico City.

## **Decline of the Onyx Industry**

### **i. Accelerated migration and new forms of consumption**

Working in the workshops we got by, but we never made enough to build a house or buy a car. To do something and get ahead we had to go to New York, and this is why people keep going. (Bernardo, migrant residing in Zapotitlán, 1/28/2004)

When the first migrants came back from New York, we all went to see them. It was obvious that they earned a lot of money, because they wore nice clothes. They spoke well, using elegant language and new words. They sounded good, like they had learned a lot over there. We thought it was wonderful over there. (Sebas, workshop owner, 2/2/04)

While the quarries and the success of the first workshops stimulated the industry's growth, the rising cost of electricity, primary material, and labor combined with shrinking markets for onyx products and the migration of the labor force to lead to the eventual decline of the industry.

International migration was a minor factor at first, but eventually became a major problem for workshop owners as their labor force turned over more and more rapidly and eventually disappeared all together by the mid-1990s. The first migrant from Zapotitlán, Luis, a twenty year old quarry worker, left in 1984 with his brother's brother-in-law, a man from Izucar de Matamoros, Puebla, who had been North several times, working in restaurants in the Bronx.<sup>26</sup> A year later, Luis financed the trips of his two brothers, also quarry workers, and some cousins and friends, who worked in the workshops. Another six months passed until another small group of men from Zapotitlán joined their *paisanos*, compatriots, in New York. And so went the first few years of migration from the town; a small group of five or six people would leave every 6 months. By 1988, larger groups of 10 to 15 left every few months, and workshop owners began to feel the effects of a dwindling labor pool.

Interviews with workshop owners and migrants who were former workshop employees and quarry workers revealed that the first migrants who made the trip to New York did not always leave out of dire economic necessity. Although a few, burdened with debt or unexpected household expenses, migrated in hopes of quickly paying off their debts, a number of migrants left to *salir adelante*, that is, to get ahead and do well for themselves. As Bernardo's quote above indicates, quarrying rock or working in the workshops paid enough only to maintain one's family. Workers' salaries covered basic foods and clothing, small repairs or additions to adobe houses, and other indispensable household and ceremonial expenditures. However, if workers wanted to "progress" or "do something" which was expressed by the desire to build a house, educate children or open a business in Mexico, then they had to migrate and earn dollars. Further, informants agreed that "progress," and the new level of consumption it brought with it, was contagious. The more residents saw their neighbors buy vehicles and build houses, the more they wanted to earn dollars.

The return of the first groups of migrants proved to many villagers that economic progress could be achieved through migration, as Sebas' quote indicates. Some migrants saved money and re-invested in their onyx workshops, bought trucks in attempt to expand marketing efforts, or opened new businesses, such as hardware and mom-and-pop stores, and restaurants. One enterprising migrant started a cinderblock factory, supplying Zapotitlán and nearby towns with construction materials.

However, most migrants' money earned in the north was spent on housing and household expenses. Cinderblock houses with multiple rooms, cement roofs, and elaborate wrought iron decoration replaced simple adobe dwellings with tin roofs. Sofas, china cabinets, and dining room sets were routinely purchased to furnish the newly built houses, while stereos, televisions, and VCRs adorned entertainment centers prominently displayed for guests. Migrants' earnings were also spent fulfilling young peoples' growing preferences for designer clothing and tennis shoes, American-style backpacks and the latest American toys and electronic games. This level of consumption was accomplished both by migrants who left during the 1980s and didn't return for many years (indeed, some have never returned), and by migrants who came and went every few years. This latter group remitted and brought savings with them and resumed their jobs in the workshops when they returned to the village. As they married, or their families grew or they accumulated debt, many returned to New York, relying on their previous experiences and contacts to facilitate their movement north.

In addition to earning money, stay-at-homes noted that the migrants' experience in the United States involved a process of personal improvement. Their exposure to urban cultural forms marked by new types of clothing and new forms of linguistic expression produced changes in individuals that were deemed positive when they returned to the village. Sebas' observations

about return migrants' dress and speech indicates that villagers perceived these new ways of being in the world as more sophisticated and modern when compared to the local vernacular and styles of dress.

During this first period of migration in the 1980s, changing consumption patterns and personal improvement were valued as positive characteristics of the emerging migration process in the village. Migration was an opportunity to earn money and improve oneself after a period of time in the United States. As a result, more and more sought the means to *salir adelante* and headed north to join the growing numbers of Zapotitecos living in the Bronx.

The local labor shortage which resulted was temporarily remedied by hiring laborers from nearby towns. With no previous experience cutting rock, the owners invested time and money in training these workers, only to watch them catch the migration "fever" and leave for New York. One workshop owner who cuts dolphins and seahorses from small blocks of onyx explained it this way:

It was like a sickness that infected the workers. They began to work, but within a few months they came to the workshop to tell me they were going to New York. Their fellow workers, or their brothers or uncles paid for the trip. Some asked me for loans and told me they would pay me when they began to work in the North. (Sebas; 2/2/04).

Many migrants who departed in the 1980s believed that migration would only be a temporary part of their working lives. However, after the 1994 peso devaluation, it was obvious to migrants and stay-at-homes that the local onyx industry was in permanent decline. Further, the low wage factory jobs available in the nearby maquiladora industry in Tehuacán failed to attract the majority of unemployed local workers who sought the means to maintain their families and *salir adelante*. In 2004, Zapotitecos reported that the average pay for maquila jobs was 500-600 pesos for a 48 hour work week. Workers are not usually paid overtime, offered health insurance or represented by independent unions, conditions which sustain poor working situations. When Zapotitecos discount the cost of transportation (approximately 100 pesos per week) and other work-related expenses, the remaining funds were not sufficient to cover household expenses, let alone meet villagers' increasing consumption expectations.<sup>27</sup>

Therefore, with no local employment options and no suitable regional employment options, Zapotitecos overwhelmingly set their sites on migrating north, converting international migration into a necessary economic alternative in the community.

...in the 1980s, people didn't have the American Dream here. We didn't even think about it. When Luis left and people began to talk about New York, then the worm got into us and we started thinking about going to New York. Then the rock ran out, production stopped and the local economy went bad. (Urbano, migrant, 1/21/04)

As a result, migrants like Urbano, unable to find local employment and accustomed to a new level of consumption, were forced to migrate more frequently and spend a longer period of time in the United States.<sup>28</sup> What had seemed like a temporary phase in life became a permanent pattern in the lives of many of the village's migrants. Several informants reported rejecting, in the 1980s, repeated opportunities of sponsorship from employers to secure legal papers available under the 1986 Immigration Reform and Control Act (IRCA), believing their stint in the United States would be short and they would return to Mexico and find suitable jobs. At the same time, the need for legal permanent residence did not appear so pressing given the relative

ease with which most migrants crossed the border into the United States (as compared to post-Operation Gatekeeper in California and Operation Hold the Line in Texas) and the relatively strong peso at the time.

I had the opportunity once to get my papers in New York in the 1980s, but I didn't really think it was that important. Here in Mexico we are so close, all we have to do is cross the border, it's not like in Guatemala or in El Salvador where they have to cross many borders. I had a friend—she is Puerto Rican—and she told me that we could get married, but each of us would live in our own houses, and then after two years, and after I got my papers, we would get divorced. But my wife didn't want me to do it, so I didn't. But sometimes I think, after all those years of being in the United States, it's really a shame that I didn't ever get my papers. (Urbano, migrant, 1/21/04)

Despite the difficulties of crossing an increasingly militarized border and with virtually no opportunities to gain legal status in the United States, economic necessity combined with the desire to maintain new consumption patterns and the accumulated migration experience among Zapotitecos facilitated the movement of people from the town into low-waged jobs in New York City. Married and single men and women and children made the journey northward. High school students, teachers, homemakers, college graduates, accountants and others joined onyx workers in restaurant kitchens, construction sites and domestic work.

Results from the MMP Ethnosurvey confirm the rapid growth of the number of migrants with international migration experience. The Migration Prevalence Ratio—the proportion of adults (greater than 15) with international migration experience—reached .25 by 2003, only 20 years after the first migrant from the town left to the United States. In other words, 25 percent of the adult population had acquired U.S. migration experience at the time of the survey. Of the 142 households surveyed, 62 had at least one migrant with U.S. migration experience with an average of 1.39 migrants per household. These figures reinforce the rapid extension of international migration experience within the town's population.<sup>29</sup>

Migrants who left in the 1980s along with the new wave of migrants from the village crossed the border and worked in New York without the opportunity to attain legal status. I discuss the implications of the undocumented status of virtually all Zapotitecos and a changing local attitude which emphasized the negative aspects of migration in a subsequent section.

## **ii. Rising Costs of Production and Decreased Demand for Onyx Products**

We lived from the rock! But the government never helped us out. The government never helped us with the production nor the sale of onyx. (Carlos, ex-onyx workshop owner, whose request for a government credit to help create a production cooperative and reduce dependency on intermediaries was denied. 5/14/2003)

Another strong blow to the industry arrived in the form of a rising cost of production. In the early 1990s, electricity rates escalated as the government sharply reduced subsidies as a result of the imposition of neoliberal economic policies (Campos Aragon 2003; Fonseca Guzman, et al. 2003). Electricity prices increased sixteen percent from 1991-92 and increased thirty-two percent from 1995-96 in real terms.<sup>30</sup> These changes were met with widespread resistance, the

most typical of which was the boycotting of payments by users. During this period, Zapotitlán workshop owners, already facing shrinking markets for their products and a dwindling labor pool, organized to demand a reduced electricity rate and boycotted payments for a year.<sup>31</sup> The movement was only partially successful: seven of the 110 workshops received a reduced rate, reportedly up to 50% of the previous one. These seven happened to be among the largest workshops and consumed the greatest amounts of electricity. The owners were members of the petty-capitalist class, described above, which maintained a political monopoly in the village and had political contacts reaching into the federal and state governments. The majority of workshops faced energy costs which continued to rise, and were also saddled with the debt that had accumulated during the boycott. Many workshops closed and their owners went north. Government favoritism of a few wealthy workshop owners deepened the already-existing political and social fissures in the community.

The electricity rate increase coincided with the exhaustion of local quarries, which, as described above, drove up the price for primary material. At the same time, those workshop owners who also controlled quarries had been accustomed to obtaining cash by selling primary material; several of them complained that it became impossible to pay electricity bills when the quarries ran out of extractable rock.

While the overall market for onyx products declined through the late 1980s and early 1990s, market demand for individual onyx products rose and fell at different rates. The demand for some onyx products dried up when they were replaced in the marketplace with similar products made from less expensive materials. For example, from 1980 to 1990, at least 17 workshops in Zapotitlán produced trophy bases, at first from large blocks of rock obtained from Zapotitlán's quarries. As the availability of large blocks declined and the price increased, trophy workshop owners purchased less expensive rock of different colors from Oaxaca and Veracruz. However, this provided only a temporary solution. However, the market for all stone trophy bases eventually contracted when trophy producers substituted wood for stone in trophy manufacture. Reflecting this reduced demand, in April 2004, there were only 2 trophy base workshops in Zapotitlán. In parallel fashion, ceramic tile floors substituted for floors made from blocks of cut onyx and onyx fragments, and plastic and metal wind chimes imported from China replaced onyx wind chimes.

The demand for less-expensive materials likely reflected the falling income of the Mexican middle and working classes beginning with the economic crisis of 1982 and continuing through the 1990s. Real disposable income per capita fell 5 percent each year between 1983 and 1988 (US Library of Congress 1996), while, from 1980 to 1987, the minimum wage fell 40% and the average wage 25% ( see also Canales 2002; Morley and Diaz-Bonilla 2003). The severely reduced purchasing power of the middle and working classes was likely an important factor in the reduced demand for luxury products like onyx.

The last "wave" of onyx production involved the manufacture of wind chimes. Despite the national economic crisis of 1994, Zapotitlán artisans produced large quantities of wind chimes through the middle of 1997.<sup>32</sup> While the demand for pipes, trophy bases and other products fell sharply, the demand for wind chimes remained steady in the early 1990s. Zapotitlán was particularly well-known for this product, which was crafted from the highest quality local rock and produced a sound unlike that obtainable with similar types of rock mined elsewhere, according to workshop owners and buyers.<sup>33</sup>

According to several informants, the downfall of wind chime production was closely linked to the decline in the quality of the workmanship. High demand pushed the workshops to produce

lower quality products, acceptable to local buyers eager to sell to intermediaries higher up in the chain. However, informants explain that the lower-quality crafts never sold and orders declined sharply in 1997.<sup>34</sup> A former local buyer of wind chimes reported that by September 1997, most of the employees of wind chime workshops had left for New York.

### **Impact of the Onyx Industry on Community Development**

Looking back over the rise and fall of the onyx industry, informants expressed frustration over the fact that the industry had not stimulated investment or growth in other sectors of the local economy. The end of the industry spelled the end of most local employment opportunities. Only a few individuals—all of them members of the petty capitalist class—were able to use their earnings in the onyx industry to diversify their investments and start additional businesses, principally based in Tehuacán. However, these were individuals with considerable capital to invest and with important contacts in the regional political and business sphere. For most Zapotitecos, however, similar opportunities were not available.

Several informants blamed the town's dismal economic conditions on the poor administration of profits made from onyx and lack of investments in community projects that could have fueled the development of other local economic enterprises. Miguel's response is typical of most:

The [workshop] owners did not administer their money well. They threw parties, there were a lot of rowdy parties and get-togethers where they wasted their money. But it was a bad investment of money, because it was non-renewable, unsustainable. They did it just to look good in front of people and nothing more (Miguel, cinderblock factory employee, 12/15/2003).

In addition, informants frequently blamed the divisive local political situation for the lack of local investment. The prevailing social relations among residents tend to be polarized and characterized by distrust and envy, the roots of which reach back to the quarry expropriations, encompass the injustice of the outcome of the electricity rate movement, and are present in contemporary discussions of the control of political power by a few individuals. These attitudes, residents explain, are not conducive to sustained organization among community members, both migrants and non-migrants, in cooperatives or other collective economic enterprises that might lead to long-term investments in the local economy. As a result, informants suggest, the town's future economic development is bleak and decent regional employment opportunities are insufficient (see note above about Tehuacan's maquiladora industry). Most Zapotitecos see migration as the only viable economic alternative.

### **Impact of Migration on Community Development**

The migrants return, they build houses in a few years when it takes the rest of us a lot more time to do it, they buy cars, trucks and go round and round and round, but they don't invest in the community so that we can progress. (Eulogio 3/8/03)

What kind of a future does international migration offer Zapotitecos? Villagers' positive valuation of migrants during the early stages of migration in Zapotitlán (see above) eventually gave way to a more negative view of migrants by stay-at-homes, a shift that reflects the changes in the experience and meaning of migration over time. As was mentioned previously, many of the first migrants left not out of dire economic necessity, but to *salir adelante*, with the notion to return promptly to Mexico to work in local or regional industries or open a business

with their earnings in the north. The first migrants' economic and personal improvement were noted approvingly by townspeople. A few of these migrants opened small businesses in Zapotitlán during the 1980s when there was little competition among businesses. These small establishments were modestly successful, contributing to the early migrants' image as prosperous and important figures in the community.

The decline in the onyx industry and elimination of most local forms of employment in Zapotitlán coincided with stricter forms of border enforcement. The combination of these factors changed the experience of migration for migrants and stay-at-homes. For migrants who moved back and forth between Zapotitlán and New York, the increased debt from the rising fees of smugglers and increased danger in the border area prompted longer stays in New York. During the period of fieldwork, it was not uncommon for migrants to report stays of 3, 4 or 5 years in New York before returning home. Back in Zapotitlán, after a few months' visit and a re-assessment of the lack of local jobs, migrants were often eager to return to their low-wage jobs in the US. Local wages (when work is available) do not cover all food, clothing, housing, health care and public education expenses let alone meet the rising expectations of townspeople for improved housing, better private education and consumer goods. "I feel like I am wasting my time here," Oscar, 27, explained when I asked him why he was leaving his wife and daughter in Zapotitlán after a 6 month visit. He had recently returned from New York after 3 and a-half years. "I would rather be in New York where I can earn dollars. Here I can make, what, like maybe 100 pesos a day. There I can make 75 dollars a day."<sup>35</sup> The difference in wage potential is appealing given the need to cover basic household expenses and meet increased consumption expectations, desires that are fueled by "consumption competition"—a keeping-up-with-the-Jones' attitude—widespread throughout the community. This, along with the difficult and expensive border crossings motivate migrants like Oscar to spend years separated from their families

Eulogio's quote above refers to these migrants, who are regarded by stay-at-homes with some degree of frustration and disappointment. From their point of view, many migrants return to their communities of origin only to publicly display their conspicuous consumption in the form of cars, designer clothes and elaborate housing construction. Inevitably, their savings run out, and they soon return to New York. For observers like Eulogio, their behavior offers no long-term solution to the economic problems which prevail in the community.

For many migrants, however, and especially those with families in Zapotitlán, long sojourns in New York, regular remittances and short visits to town every few years are the only way to ensure that their families are adequately fed, clothed, educated and provided with suitable housing. Antonio has made five trips to New York since 1991 to pay for his wedding, the construction of his house and the day-to-day maintenance of his wife and two children. Beyond these expenditures, he and his wife opened a mom-and-pop store in the front room of their house and started a small pig farm. In addition to stiff competition from larger agricultural firms in the Tehuacán Valley, the pig farm was poorly managed by Antonio's local partner and went bankrupt. Earnings from the mom and pop store were quickly reduced when two of his neighbors decided to open their own stores. Back in New York, Antonio vows not to return to Zapotitlán until he has finished his house and saved enough money to buy a truck and start a business in Tehuacán, the only place, he believes, where a business might be successful. Even though he earns \$500 per week as a cook in a Greenwich Village restaurant, a decent salary by migrant standards, he knows it will take him many years to save the amount of money necessary to start his business. His financial ambitions, however, are balanced against his desire to maintain good relations with his family and see his children grow up. The expense and danger of return trips to Zapotitlán, however, make accomplishing both of these objectives difficult for Antonio.

Some migrants like Antonio with money left over after their basic household expenditures are met attempt to find productive investments in Zapotitlán. Their money is often invested in small businesses, particularly mom-and-pop, stationary, and clothing stores, toy shops, restaurants, animal feed and hardware stores. However, in this town of less than 3,000 people, the market for goods and services is quickly saturated. As a result, these types of businesses face too much competition and are almost always short-lived. On the whole, migrants struggle to find productive investments for their remittances in Zapotitlán.

Indeed, in post-onyx Zapotitlán, the natural resource base is sufficient only to support a few dozen *salineros*, shepherds and agriculturalists, whose income is often supplemented by remittances from sons and daughters working in New York. The multitude of onyx workshops has shrunk to two dozen simple commodity producing units without the capability for expansion. Small stores and shops compete for a limited number of customers. These local economic conditions do not permit productive investment for the vast majority of townspeople. Only a handful of businesses are self-sufficient, without, however, much potential for growth given the town's size. As a result, many of Zapotitlán's households must rely on continued migration and migrants' remittances for household reproduction.

## Conclusions

In this paper, I explored the historical development of the local onyx industry in Zapotitlán and its relationship to the timing of international migration. While migration from other parts of Puebla's Mixtec region began in the 1950s and 60s, migration from the town was delayed until the mid-1980s. Zapotitlán was drawn into the bottom tier of the hierarchy of the international onyx industry, first as a supplier of raw material and then as a point of production of onyx crafts and construction materials. While the local industry occupied this peripheral production space, it provided employment for the majority of workers from the town from the 1970s to the early 1990s, stemming the movement of labor migrants to the United States. The first migrants, principally young, unmarried men, employed in local workshops, began to leave in the mid-1980s, seeking the means to *salir adelante*. However, by the early 1990s, large numbers of men and women (and a few children) had made their way north, in response to the industry's decline and a lack of local employment alternatives.

The fall of the town's industry from its marginal place in the onyx hierarchy was a result of the decline international onyx industry as well as the impact of restructuring and continuing crises in the broader Mexican economy on the local level. These broader currents were experienced by Zapotitecos in a number of ways. First, workshop owners confronted shrinking demand for onyx products, a result both of market substitution of onyx products by goods made from cheaper materials and declining consumer incomes. Second, reductions in government subsidies to the energy sector translated into rising costs of electricity in workshops. Reduced demand and rising production costs combined with a third factor, the migration of the labor force to the United States, to drive down local production. The remaining workshops in business in early 2004 have fallen from petty capitalist production into petty commodity production status, achieving little more than simple reproduction. Owners earn enough only to maintain their existing level of production, with little opportunity to save or invest.<sup>36</sup> Wulfrano, a wind chime producer, explained the situation this way: "Now we work only to be able to eat, it's not a business anymore,"<sup>37</sup> a sentiment repeated over and over by those workshop owners struggling in 2004 to maintain a place, however marginal, in the onyx industry.

Within the political economic analysis of the industry in Zapotitlán, I have attempted to incorporate a political ecology focus in order to call attention to the dialectic of local ecology, productive activity, and the distribution of power. The particular configuration of the local industry was shaped, I have suggested, by the manner in which Zapotitlán's quarries were exploited. Quarry mining contributed to the development of the onyx processing industry in Zapotitlán by providing the capital necessary to establish workshops. However, the manner in which onyx was extracted and distributed limited the amount of rock available in local production and led to the rapid depletion of the quarries, limiting long term capital accumulation. However, it is unlikely that more sustainable management of the quarries would have prevented migration. Given the strong structural contradictions which prevail in the integration of the Mexican and US economies, the overall tendency is for Mexican workers to be drawn into the US labor market, albeit in its most marginal spaces (Gledhill 1995; Kearney 1991; Palerm and Urquiola 1993; Zlotniski 1994). However, it is possible, based on the San Antonio Texcala case, that some quarry and workshop owners in Zapotitlán could have continued to realize an income from the sale of raw material and maintained local production if quarries had not been rapidly depleted.

Bringing together political economy and political ecology approaches, I have attempted to outline how capitalism reconfigured ecology, economy and society in Zapotitlán, emphasizing how natural resources, capital and labor were drawn into commodity production, and then, as natural resources and capital were exhausted, how labor was drawn into migration. I called attention to the contingencies of these arrangements, pointing out that in this corner of the Mixteca development and migration unfolded differently than in adjacent valleys and sierras to the south and west of Zapotitlán. Through this analysis, I suggest that there is a convergence between political economy approaches which seek to understand how capitalism develops in specific times and places (Roseberry 2002), and political ecology approaches which attempt to understand nature-society relationships under specific capital-labor arrangements (Burkett 1999; Crumley 1994). An analysis of the shifting relationships among capital, labor and ecology in the local onyx industry, the larger commodity industry in which it was embedded and the economic and social crisis in Mexico, reveals how ecological-economic-social articulations are far from inevitable, and demand an ethnographic approach that moves away from simple core-periphery (Roseberry 2002:61) or nature-society dichotomies (Foster 2000b).

Finally, like many places in the state of Puebla (Binford 2004b), the future prospects for Zapotitecos on both sides of the border are severely constrained by the timing of the arrival of international migration to the town. The onyx industry provided the majority of households with economic strategies that allowed them to weather the early years of economic and social crisis through the 1980s. The vast majority of migrants from the town arrived in the United States well after the passage of the 1986 immigration reforms, leaving them with little chance to regularize their status in the United States. This situation contrasts sharply with the situation in rural and urban areas of the historic sending states (Guanajuato, Jalisco, Michoacán, Zacatecas) and even other areas of Puebla's Mixtec region (Smith 1995; Smith 2001) where migration massified decades before IRCA and where there are significant numbers of individuals who have legal permanent residence in the United States. Apart from the fact that these migrants move freely across borders and within the U.S., they also provide secure platforms from which even undocumented relatives and friends can gain important information, contacts and knowledge about U.S. society. In contrast, ninety-eight percent of the migrants from Zapotitlán face continued separation from their families, dangerous border crossings and a higher level of exploitation in receiving areas.<sup>38</sup> The social costs of migration mount when family reunification prospects through legal channels are slim, and migrants are relegated to the lowest slots in the U.S. labor market. The social costs of migration along with the lack of local productive

investment opportunities in the town does not point to a bright future for the vast majority of Zapotitecos.

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<sup>2</sup> The following two paragraphs are based on Binford 2005.

<sup>3</sup> I follow Cook and Binford's (1990) definitions of petty commodity production and petty capitalist production in this discussion. Petty commodity production includes the following: a) the regular and exclusive production of products for market exchange; b) small-scale private enterprise in which the means of production are privately controlled by direct producers and labor is nonwaged; c) mutual independence of production units; and d) the purpose or result of production may be simple reproduction but never to the exclusion of capital accumulation or profit, which may underwrite productivity increases up to the point at which labor must be hired to facilitate further increases (1990:10). Petty capitalism, they argue, occurs when: a) the means of production are privately owned or controlled; b) wage labor is regularly employed either in lieu of or to supplement household or reciprocal labor to the degree that it produces more than half of the value of unit output per turnover period; c) the purpose of production for each turnover period is to generate a net cash return (profit) in excess of input costs; d) the individual proprietor spends at least as much time in management and marketing as participating directly in production; and e) over time, in response to market conditions and profitability, the unit will expand or contract its productive capacity by altering its investment in labor or other means of production (1990:130).

<sup>4</sup> The following discussion is based upon long-term participant observation and unstructured and semi-structured interviews with over 100 migrant and non-migrant members of the community. I have conducted field research in Zapotitlán intermittently since 1998. From January 2003 to August 2004 I lived in the town on a permanent basis, participating in the daily activities of individuals and families, while studying its economic, social and political organization, and the relationships emerging between residents and migrants. From September 2004 to February 2005 I lived in New York City and conducted interviews with Zapotitecos/as in their homes and work sites principally in the Bronx and Brooklyn.

<sup>5</sup> The population count was obtained from a census conducted by the author. The estimate of Zapotitecos residing in New York is based on interviews with municipal officials, migrants and individuals who operate *paqueterías*, shuttling packages between Zapotitlán and New York City.

<sup>6</sup> "Salinas" is the term used to refer to the salt crystallizing ponds and their associated salt water wells which, together, make up the salt producing apparatus.

<sup>7</sup> A common practice is for a head of household to purchase livestock with remittances, so that when household members return from the US, the livestock can be sold to make up for cash shortages.

<sup>8</sup> Ixtle (derived from the Nahuatl, *ichtli*) production involved extracting the fibers from the leaves of the maguey plant and twining them into rope of various sizes (see Cook and Binford 1990, pp. 83-87 and p. 262 note 9 for further details).

<sup>9</sup> Zapotitlán's designation as a Villa in 1875 is a testament to this "golden era" of trade and commerce in the town. However, Zapotitlán had been part of the trade routes throughout the Mixteca since the Pre-Hispanic era (see Castellon 2000, p. 35, 58 and 66).

<sup>10</sup> The Mexican Migration Project's Ethnosurvey was administered from May – June 2004 to 142 of Zapotitlán's 575 households (a 25% sample). The Mexican Migration Project (MMP) is a collaborative research project based at Princeton University and the University of Guadalajara. The survey instrument and other information about the MMP is available at <http://mmp.opr.princeton.edu>.

<sup>11</sup> Various types of travertine and a few types of marble extracted in local quarries were used in the manufacture of specific products. A complete description of these types and their associated products is beyond the scope of this paper. I will, instead, use the colloquial term "onyx" to refer to this group of rocks.

<sup>12</sup> There are three basic land tenure types in rural Mexico: bienes comunales, ejido and private property. Bienes comunales, or common property, refers to the land, water and other natural resources within community boundaries that are held in common and may be exploited by community members. Those with rights to access to resources are called comuneros, or commoners. Ejido refers to land that was often appropriated from private interests and redistributed after the Mexican Revolution to rural communities for agricultural purposes. Although land was petitioned collectively by heads (mostly male) of households, it was generally divided up into plots and worked individually. Officially, land rights were passed to ejidatarios' sons upon the death of the original ejidatario. However, often these rights were bought, sold, or traded with others.

<sup>13</sup> MGZ, interview, 23 February 2004. Of these 75 tons extracted weekly, 70 were sold to the mill in Tehuacán to make *granito*, small fragments of rock, used in the manufacture of mosaic floors, while 5 tons were worked up into pipes and chess boards in his workshop.

<sup>14</sup> Apart from the profitable onyx workshops, some members of the petty capitalist class also accessed small or medium sized quarries, owned stores or possessed large numbers of livestock.

<sup>15</sup> Taking into account Miahuatepec, San Pedro, and the remaining small to medium sized quarries in the bienes comunales, informants estimate there were approximately 150 quarry owners in total.

<sup>16</sup> VRC, interview 28 March 2004

<sup>17</sup> The comuneros built their case against the absentee-elite by proving that they did not reside in the community, did not contribute to community funds, did not attend comunero general assemblies, and, therefore, were not "recognized," or accepted, as community members. The absentee-elite argued that their salinas and quarries were privately held, an argument that was not convincing, especially since Zapotitlán's lands had been incorporated as communal land in 1964.

<sup>18</sup> Quarry "exhaustion" occurred when the value of the remaining onyx was less than the cost of extracting it. A related issue was the ability to extract onyx safely, that is, without the danger that the ceiling of the quarry would collapse during the mining of onyx lying deep in the quarry.

<sup>19</sup> There were some internal attempts to control the rate of onyx extraction. One comunero attempted to organize quarry owners to control extraction in order to decrease competition among quarries for clients and maintain a high price (similar to the efforts on the part of the ejidatarios in San Antonio Texcala, see text). He was shot and killed. His murder discouraged others from attempting to organize quarry owners. For a time, the comisariado attempted to impose a fee on trucks loaded with onyx leaving Zapotitlán bound for processing centers in Tehuacán, Puebla City, and Tecalli de Herrera. The fees were used to build the municipal palace, the town plaza, and the town's first health clinic. However, some quarry owners ordered drivers to leave in the middle of the night in order to avoid paying the fee, reducing the amount of money available for community projects.

<sup>20</sup> San Antonio Texcala was granted ejido status in 1925. Upon death of an ejidatario, his eldest son residing in the community is granted all the rights and obligations of an ejidatario.

<sup>21</sup> Informants from San Antonio claim that Zapotitlán's "overexploitation" of onyx quarries led to a significant decline in the price of onyx from both villages. Once Zapotitlán's quarries became depleted, San Antonio was able to recover the market for onyx and sell rock at the relatively high price mentioned in the text.

<sup>22</sup> The most common types of marble purchased by Zapotitlán's workshops were from Tepeaca, Pue (pink), Orizaba, Ver (black), Chautla, Pue (white/gray), Teotitlan del Camino, Oax (rust), Tobasco (gray), Zacatecas (mixed colors), San Lorenzo Albarradas, Oax (milky white), and Etna, Oax (green).

<sup>23</sup> In addition to providing unpaid household labor in the onyx workshops, women made important contributions to household reproduction through their waged labor as outworkers in the embroidery industry in the Tehuacán region from the 1970s to the early 1990s. The most typical arrangement involved women collecting pre-patterned, unassembled dresses and thread from merchants in San Gabriel Chilac, a neighboring ejido in the Tehuacán valley, embroidering at home, and returning the completed work at the end of the week to receive a piece-rate wage. Men also reportedly assisted women embroider after working in the onyx workshop during the day, although the extent of women's outwork and men's assistance is unknown at this time. Although women's wages as outworkers was excessively low, only 20% of men's weekly salary for work in the onyx workshops for a comparable number of hours, some women indicate that they were able to make significant contributions to the household's weekly budget.

<sup>24</sup> For example, the dates of peak demand for several onyx crafts produced in Zapotitan is as follows: pipes (late 1960s-late 70s), trophy bases (1980-90), timbres (late 1980s-late 1990s), and terrazzo (1970-mid 80s).

<sup>25</sup> As of March 2004, 10 workshops produced wind chimes, 7 workshops made figurines (principally small [10 cm.] animal figurines), 4 crushed and sorted onyx pieces for the mosaic industry, and 2 manufactured trophy bases.

<sup>26</sup> Izucar de Matamoros, Puebla is a small city (population. approximately 40,000) located in the western portion of the state of Puebla, some 4-5 hours from Zapotitlán.

<sup>27</sup> Tehuacan's maquila industry is dedicated to the production of clothing—particularly blue jeans—for export to the United States (Barrios Hernandez and Hernandez 2003). While the low wages fail to attract many household heads, other individuals are drawn into the maquila workforce. Many single mothers, for example, are forced to take these jobs because they have no other sources of income. It is more common for unmarried women and (less frequently) unmarried men to work in maquilas, turning over a portion of their earnings to their parents and

using the remainder for their personal expenses. In this way, young people's salaries contribute in small but significant ways to total household income and permit young people to satisfy some of their consumption desires through the purchase of designer clothes and shoes, electronic equipment, and other consumer goods. The complementary role of maquila salaries earned by young poblanos has been documented in San Jose Miahuatlán, a town in the Tehuacan Valley (Fitting 2004), Chautla, a peri-urban town near Puebla City (Churchill 2004), and in the Atlixco region near Puebla City (Juárez-Núñez 2002).

<sup>28</sup> Blanca Cordero (2004) outlines the combination of structural conditions and neoliberal policies which led to the falling profitability of peanut cultivation and subsequent massification of international migration in Huaquechula, a rural town in the Atlixco Valley located in the western portion of the state of Puebla. In addition to structural forces, she similarly places emphasis on the local perception of economic success linked to migration, the creation of new lifestyles associated with a new local model of consumption and the consolidation of migrant networks as important factors in the continuity of migrant flows from the town.

<sup>29</sup> I thank Craig McIntosh for assistance in computing these figures.

<sup>30</sup> These figures, adjusted for inflation, were calculated using data for household electricity rate prices provided in the Balance Nacional de Energia 2003, Secretaria de Energia, Mexico DF. I thank Ernesto Aguayo for providing the data and helping with the calculations.

<sup>31</sup> Zapotitlán's protest with the Comisión Federal de Electricidad was one of dozens of local and regional resistance movements throughout the country (see John Ross "Chiapas Blackout: Mexico ratepayers electricity strike," San Francisco Bay Guardian, 9 April 1997; "Realizará hoy El Barzón tomas de oficinas de la CFE por el incremento a tarifas," La Jornada, 5 November 1996; "Tobasco: suspende la CFE el servicio a 60 localidades en resistencia civil," La Jornada, 22 November 1996)

<sup>32</sup> Wind chimes are principally sold in tourist centers such as Cancun, Acapulco, Puerto Vallarta and Mazatlán, according to clients. This suggests that demand for these products was not affected by Mexican workers' falling incomes, since the majority of tourists in these places are foreigners with sufficient disposable incomes.

<sup>33</sup> Currently, several wind chime workshops have substituted an onyx identical to that of Zapotitlán's in their production process. The new onyx, from Santiago Miahuatlán, an ejido in the Tehuacán valley, is less expensive than Zapotitlán's onyx.

<sup>34</sup> However, "lower quality" must be understood in the context of the prevailing relations of production. For example, the wind chime workshop owners and employees are capable of creating high-quality onyx crafts, but high-quality wind chimes are not paid a higher price than lower-quality ones. "No nos conviene que los timbres estan bien hechecitas, que cortemos la figura bonita o que esmerilamos las piezas, porque es más gasto de luz y tiempo, y no nos pagan más." (It doesn't matter if the wind chimes are well made, if we cut nice figures or polish the pieces, because it's a waste of electricity and time, and they don't pay us more.) (Jorge, 2/26/2004) Since 1999, the price paid for the standard-sized wind chime has remained fixed at 7 pesos.

<sup>35</sup> Interview, 7/21/2004.

<sup>36</sup> See Cook and Binford (1990:100-101) for a definition and discussion of simple reproduction.

<sup>37</sup> Interview, 3/29/2004

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<sup>38</sup> Of the 206 migrants from Zapotitlán recorded in the Ethnosurvey, 3 had legal permanent residence, 2 traveled to the U.S. with tourist visas and 201 entered the country without documents on their last migration to the United States.